

Antiquity

A Quarterly Review of Archaeology

VOL. VIII No. 30

JUNE 1934

Editorial Notes

THE outstanding event of the year is the publication of the second volume—actually two large books—of 'Ur Excavations'.* The world is thus given the substantive report on an epoch-making event within six years of its occurrence. Fairly full annual reports have already appeared in THE ANTIQUARIES JOURNAL and in the PENNSYLVANIA UNIVERSITY MUSEUM JOURNAL. Dr Woolley thus succeeds in striking the happy mean between undue haste and excessive delay. Having no hungry hoards demanding annual appeasement, he is under no compulsion to settle his whole account each year; but neither does he indefinitely postpone the settlement of his debt. All scholars will agree that he has discharged it in full in the present instance; and they will be especially grateful to the Carnegie Corporation for that help which puts these sumptuous volumes within the reach of the students for whom they are intended. Examples have occurred—Mohenjo-daro, Serindia and to some extent even Knossos—where the final accounts of equally important work have been published at prices far beyond the average intelligent purse.

* *Ur Excavations*, vol. II: *The Royal Cemetery*, by C. L. Woolley; in two parts, text (604 pages) and plates (274). Published for the Trustees of the British Museum, and of the Museum of the University of Pennsylvania, by the aid of a grant from the Carnegie Corporation of New York; and printed in Great Britain at the University Press, Oxford. Price four guineas (the price was three guineas before April).

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Of the contents of the volumes we need say little. They describe the excavation of the tombs in the Royal Cemetery which yielded such rich grave-goods and so many priceless (if not always to our eyes beautiful) works of art. Both specialist and general reader will be well content with the fare provided. Dr Woolley's narrative is always lucid and often enthralling; nor need any layman hesitate to read it. He has developed his own technique of excavation and conservation; and his collaboration with expert artificers at the British Museum has produced startling results, as the illustrations show. As a minor point of criticism we note a difference in quality between the indoor photographs (of objects) and those of the excavations themselves which, though good and doubtless taken under extreme difficulties of light and dust, might sometimes be better.



British archaeologists have every reason to be proud of their post-war record at home and abroad; and everyone will congratulate Dr and Mrs Woolley on the successful conclusion of one episode in a great joint undertaking. The honours are divided between England, America, Syria and Iraq, each contributing after his kind.



This number of ANTIQUITY contains a list of Books Received. Such is the accepted method of acknowledging books which cannot be reviewed; but we feel impelled to add some words in extenuation. Obviously there is not room to review at length every book received. Yet the output of books, periodicals and 'separata' grows greater, and many of them are good and even readable. Occasional massacres are inevitable, and on such occasions both justice and expediency have to be considered. The interests of readers and authors demand that reviews shall be published as quickly as possible, accumulations have to be got rid of somehow, or we remain perpetually in arrears. We hope that those whose books are only thus briefly acknowledged—or may even have been altogether overlooked—will appreciate our difficulties and make allowances. We do our single-handed best, but the labour is onerous and unremitting.

EDITORIAL NOTES

We would take this opportunity of thanking those reviewers who have helped us so generously in the past, and continue to do so. It is not an easy task, we know, to review a book. For one thing the conscientious reviewer has to read the book first ; whereas, if he is merely writing an article or (as in this instance) thinking aloud, he can take up his pen at once and go ahead. Then again, there are many books which do not lend themselves to verbiage ; either they are so good that there is little or nothing to criticize, or they are too bad for words. It is always possible, and generally desirable, to give some sort of resumé of the contents, but this takes time. The reader wants certain concrete information :—Is this a good (*i.e.* dependable) book ? Is it written well, or in jargon ? Can I, a mere layman, understand what it is all about ? and (last but not least) How much is it and where can I buy it ?



The last items are of great practical importance, and we make every effort to inform our readers of them. (We have sometimes written specially to the publishers to enquire the price). It seems incredible that anyone should be so foolish as to send a book to an editor for review—or indeed send it out at all—without giving his own address and the price of the book ; yet this is often done, the worst offenders being foreign publishers, museums and learned societies. How on earth they expect the public to buy their goods when they withhold this essential information it is difficult to imagine.



The publishers' habit of giving no address except 'Paris' or 'Berlin', for example, has no sense. They may assume, for business purposes, that they are so well known that nothing else is needed, but this attitude serves no useful purpose and is simply a great inconvenience to all concerned. It is difficult, however, to think of any adequate explanation for the omission of the price, except in the case of very expensive books. It is surely a matter of common knowledge that books *are* sold, not given away by publishers ; so why be shy of saying for how much ? The price does not fluctuate unless the currency

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does ; and even then the rate of change in the book-trade is slow, and lags. It is the rarest thing to find a book with the price printed on it. We give it up.

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Failure to state year of publication (on title-page, even if also elsewhere) ought to be a penal offence. It is perhaps less common than the others mentioned, and is now mainly confined to elementary textbooks which become out of date soon after publication (when not so already). Apart from bibliographical requirements it is important to know the date because that tells us at what stage in the history of the subject, and in what cultural environment, it was composed. For the same reason the best people always try to give dates in their footnote references to books and articles, the paragon in this respect being Rice Holmes's *Ancient Britain and the Invasions of Julius Caesar* (Oxford, 1907). All subject bibliographies should give dates, even if they have to be supplied from internal or other evidence, or are only approximate.

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Finally we here and now broadcast an appeal to those few reviewers who, having promised, have so far failed to reply to all enquiries about their progress—including also some writers of articles who have not responded. The sending out of reminders is an unnecessary waste of our time which might be used to better advantage.

The Stone Age of Palestine

by DOROTHY A. E. GARROD

THE archaeology of Palestine, though far less spectacular than that of its neighbours, Egypt and Iraq, can always rely on a certain public outside the circle of specialists. Even the most uninspiring potsherds, if they are dug up in Jericho or Samaria, are invested with a certain glamour by their association with Joshua or Ahab, and the hope of unearthing the Ark of the Covenant or the tomb of David has inspired more than one forlorn venture. Until recent years, however, the Stone Age of Palestine, which receives no adventitious help from association with the Bible, has suffered from neglect. It is true that a considerable amount of surface material was collected, and the names of Père Germer-Durand, Père Vincent, Père Mallon and Dr Paul Karge stand out as pioneers of prehistoric studies in this region, but until 1925 no systematic excavation had taken place. Ten years ago an article on the prehistory of Palestine would have been a very brief affair; today it is difficult to compress into a limited space all there is to say, so rich has this small country proved in the short time that excavation has been carried out.

There is no need to dwell on the pioneer efforts of Mr Turville-Petre which resulted in the discovery of the Galilee skull; these are well known and have already been published. Nor shall I describe in detail the admirable work done by Monsieur René Neuville on behalf of the Institut de Paléontologie Humaine, since much of his work still awaits publication. I propose instead to describe the results of excavations carried on during six seasons in the Wady al-Mughara (Valley of the Caves) on Mount Carmel by a Joint Expedition of the British School of Archaeology in Jerusalem and the American School of Prehistoric Research. This remarkable site supplies the key to a large section of Palestinian prehistory. Various Palaeolithic stages have been found in other sites, but at the Wady al-Mughara these all fall into place as part of a great sequence of deposits unequalled in this region. To

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describe this sequence is, for all practical purposes, to describe the Stone Age of Palestine from the Upper Acheulean onwards.

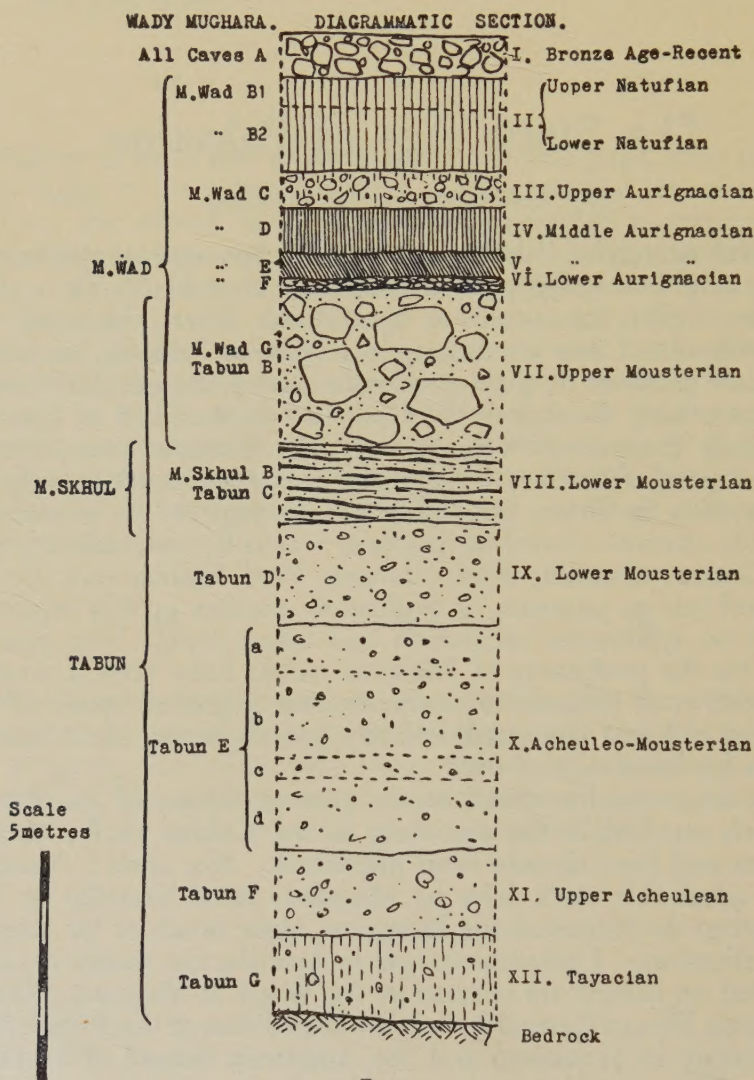


FIG. 1

The Wady al-Mughara lies at the western foot of Carmel, $3\frac{1}{2}$ miles southeast of the Crusaders' Castle at Athlit. (FIG. 6, p. 144). Both sides

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of the valley are riddled with caves, but the only ones of interest to the archaeologist are those which lie in a lofty cliff on the southern side, at the point where the valley opens on to the coastal plain. They are four in number ; the Mugharet el-Wad (Cave of the Valley), Mugharet ej-Jamal (Cave of the Camel), and the Tabūn (Oven), all of which face northwest and command the coastal plain, and the Mugharet es-Skhūl (Cave of the Kids), more a rock-shelter than a true cave, which lies a little way up the valley, apart from the other three.

The Mugharet ej-Jamal has been largely emptied of its deposits at an unknown date, and the traces of prehistoric occupation are too slight to be of value. The other three, however, more than make up for this. The full prehistoric sequence is not present in any one of them, but they overlap and complete each other in a remarkable way. In the Mugharet el-Wad we start at the top with a Mesolithic layer, and go down through several stages of Aurignacian to the Upper Mousterian ; in the Tabūn the Upper Mousterian lies at the top, and the underlying layers are Lower Mousterian, Acheuleo-Mousterian, Upper Acheulean, and finally Tayacian (a rough flake-industry only recently recognized and named). The Mugharet es-Skhūl contains only one Palaeolithic layer, the Lower Mousterian, but this has yielded nine human skeletons of a type closely related to Neandertal.

The detailed stratigraphy of the caves is rather complicated, and as it will be published in due course I do not propose to describe it here. It is sufficient to say that if we add together the average thicknesses of the different prehistoric layers we get a synthetic section roughly 21 metres in thickness ; of this 2 metres represents the Mesolithic, 2.50 metres the Upper Palaeolithic, and 16.50 metres the Middle and Lower Palaeolithic. In describing these levels I shall follow the order of excavation, and begin at the top, passing backwards in time. (FIG. 1).

The top level in all the caves is very stony, and contains remains of all ages from the Early Bronze down to modern times, without any trace of stratification. Immediately below this in the Mugharet el-Wad comes the Mesolithic layer, which is very rich in material.

The Mesolithic of Palestine, for which the name Natufian has been accepted, while undoubtedly related to the Tardenoisian and other microlithic industries, has a strongly marked individuality, especially in its older stages. The Upper Natufian is somewhat uninteresting ; it is marked by an abundance of microlithic lunates, micro-burins, and rather rough sickle-blades, with occasional notched arrow-heads. In the Lower Natufian the flint implements are slightly larger, and much

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better made. The sickle-blades are neatly squared at the ends, and care is taken that the cutting-edges shall be as straight as possible. Microburins are very rare, and arrow-heads completely absent. A large number of implements of all types, including lunates and sickle-blades, do not show the ordinary blunted-back technique, but instead have their backs sharpened by careful retouch from both faces. There is no doubt that this is meant to facilitate setting in a grooved haft. (FIG. 2).

Although the flint industry of the Lower Natufian is decidedly attractive, the thing that gives this industry its distinctive character is the presence of a large number of objects carved out of bone or stone. (FIG. 7). In the Mugharet el-Wad we found bone pins, pendants, fragments of harpoons, and a number of bone blades grooved down one edge. The latter we interpreted as fragments of sickle-hafts, and this was presently confirmed by the discovery of a piece of rib with two flint blades still in place. The Natufians were also artists of some merit. From the Mugharet el-Wad come two carvings; one in bone of a young deer with head thrown back in the attitude of sucking, the other, in calcite, a small human head, rather roughly executed. These finds were supplemented in a remarkable way by discoveries made in 1931 by Mr Turville-Petre, who was excavating on behalf of our Expedition a cave lying 10 miles south of the Wady Mughara, near the colony of Zichron Jacob. This is the Mugharet el-Kebara, and in it Mr Petre found a very rich Lower Natufian layer which yielded a quantity of bone pins, harpoons, fish-hooks, pendants and two superb grooved sickle-hafts with animal heads carved on the handles—one apparently a goat, the other indeterminable. Two more heads—one of a deer, the other, some kind of bovine creature—have probably been broken off similar hafts. M. Neuville has recently found a very fine piece of sculpture in a Lower Natufian layer in the cave of Umm ez-Zuweitina, near Bethlehem. This is carved in the round in grey limestone, and represents a deer with legs drawn up under the body and neck stretched forward. The head unfortunately is missing, owing to an old break, and has not been recovered.

Well-made vessels of limestone or basalt are fairly common in the Lower Natufian, and are accompanied by cylindrical basalt pestles, some of which are stained with ochre.

Our discoveries at the Mugharet el-Wad threw considerable light on the burial customs and physical type of the Natufian peoples. Remains of more than fifty individuals were found, most of them on the terrace of the cave. Sir Arthur Keith considers that they belong



FIG. 2. FLINT IMPLEMENTS FROM LEVEL B2 MUGHARET EL-WAD, LOWER NATUFIAN

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to a short, long-headed race, resembling the pre-Dynastic Egyptians. In the majority of cases the body lay on the right or left side, indifferently, with the legs drawn up. Inside the cave, however, the bodies were all extended, and lying on the back. All burials, whether flexed or extended, were packed into place with blocks of limestone, possibly to prevent the ghost from walking. Five of the skeletons wore caps or circlets of dentalium shells, which were still almost perfectly in place, and two of these also had necklaces of bone pendants.

The observations of M. Neuville, Mr Turville-Petre and myself all go to show that no pottery is associated with the Natufian; it can therefore be truly described as Mesolithic, even though the presence of sickles points to the existence of some form of agriculture. It is possible, however, that in Palestine, where no true Neolithic has yet been found, the end of the Mesolithic does not precede by very long the Early Bronze Age, and in that case the last stages of the Natufian may not be much older than 3500 B.C., though the Lower Natufian probably goes considerably further back. In the opinion of Miss D. M. Bate, the animal remains from the Natufian of the Mugharet el-Wad and of Kebara point to a comparatively early date, and she finds no trace of the domestication of the ox and horse.

Always proceeding downwards we now come to the Upper Palaeolithic. We found in the Mugharet el-Wad remains of four stages of the Aurignacian, the total thickness of the Upper Palaeolithic layers being 2.50 m. The Upper Aurignacian of this region (which is not comparable with the Upper Aurignacian of Europe and is probably contemporary with the Magdalenian), was found in Layer Wad c, immediately underlying the Lower Natufian. It is a crude industry, which does not compare very closely with any other known Upper Palaeolithic stage. The curved flint knives of Chatelperron type at first sight suggest a connexion with the Capsian of North Africa, but the associated tools do not bear this out. By far the most abundant is the core-scraper, generally rather rough, and next to this, the prismatic graver. In this one layer, which did not occupy a very large area in the cave, thousands of these scrapers and graters were found, as compared with barely a hundred Chatelperron points. (FIG. 3). Animal bones were abundant, but there were no bone tools, and human remains were confined to a fragment of a lower jaw.

Layer Wad d was subdivided into D1 and D2, but in fact the industries found in these two divisions resemble each other very closely, the chief difference being that in D2 the implements are better finished,

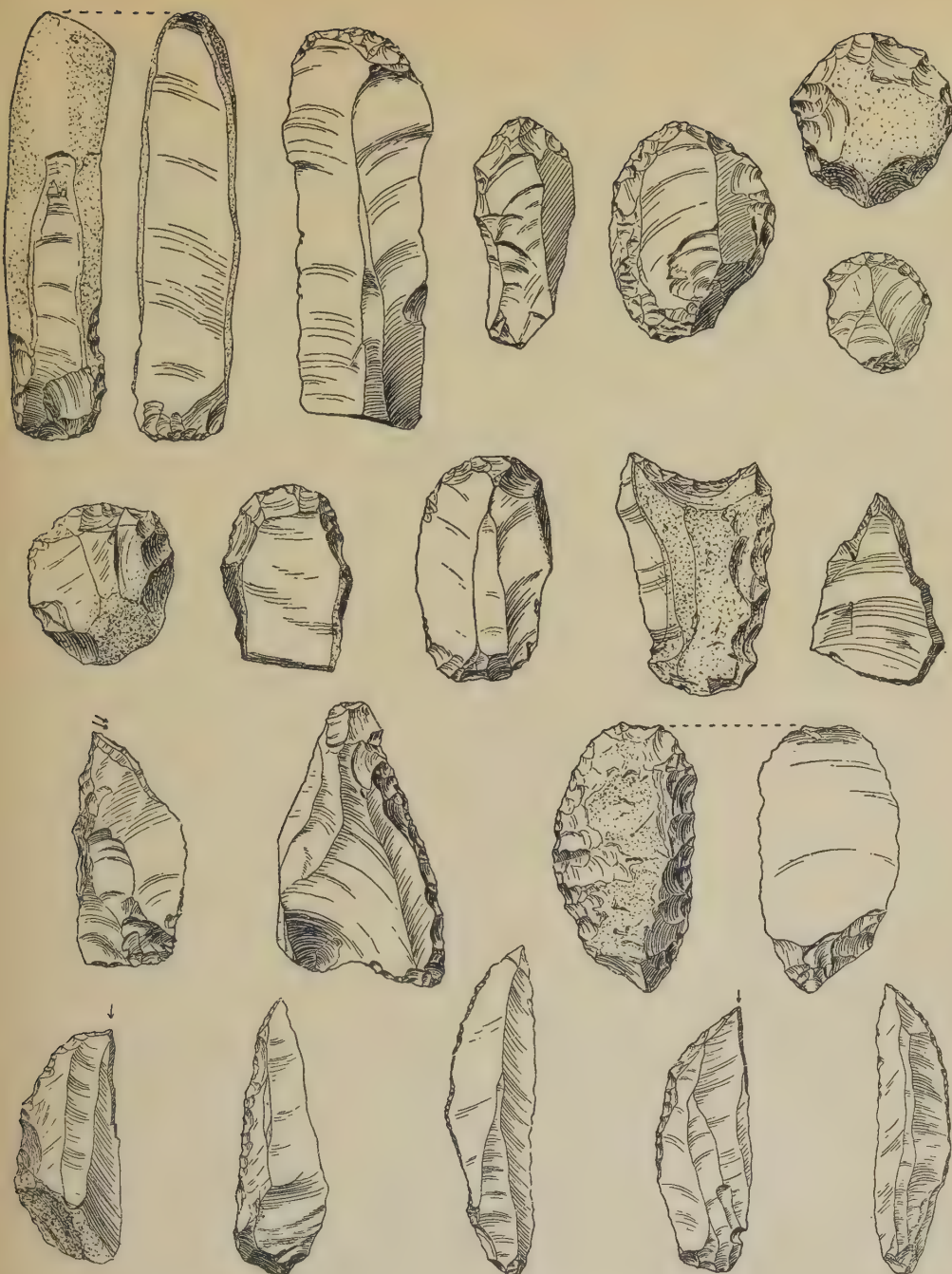


FIG. 3. MUGHARET EL-WAD: UPPER AURIGNACIAN, LAYER C

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and show more clearly defined types. Layer D provided one of the surprises of the Wady Mughara. On general grounds it seemed likely that one might look for African influences in the Palaeolithic of Palestine, since geographically it can almost be considered an extension of Egypt; moreover, as we have seen, the curved points of Wad c had already suggested a possible Caspian connexion. The industry of D however resembles as closely as possible the Middle Aurignacian of Europe, a stage which was considered until fairly recently to be a development *in situ* of the Lower Aurignacian, at a time when Europe was closed to North African influences. The presence of a flourishing industry of Middle Aurignacian type in the Near East suggests that the part played by Oriental influences in the Upper Palaeolithic has been overlooked up to the present in favour of what M. Vaufrey has described as a *mirage africain*. (FIG. 4).

The Aurignacian of Wad D yielded beautifully made rostrate scrapers with fluted retouch, carinated and end-scrapers, graters of all kinds, including the busqué type, and blades and points worked all round with the broad flat retouch so characteristic of the Middle Aurignacian. No bone tools or weapons were found, and this was rather surprising, as in Europe the bone 'split-base' point or *pointe d'Aurignac* is absolutely typical of this stage. A possible explanation offers itself. The very large amount of charcoal found in this layer suggests that wood was readily obtainable; in Western Europe, on the other hand, the conditions produced by the second maximum of the Würmian glaciation were unfavourable to the growth of trees. May not the Aurignacian people of Palestine have been in the habit of using wood for many of the purposes for which their European kinsmen used bone? The *pointe d'Aurignac*, in particular, with its technique of splitting the base instead of cutting it into a fork, is a form that may well have been copied from a wooden prototype.

Layer Wad E (FIG. 5) also contains an industry of Middle Aurignacian character, but belonging definitely to an earlier type than that of D. It is marked by broad end-scrapers and round scrapers, the rostrate form being rare. A characteristic implement is a small finely retouched sharp flint point; this is already well-known from Krems in Lower Austria, and from Font-Yves near Brive, and I have named it the Font-Yves point. Both these sites are considered to belong to an early stage of the Middle Aurignacian, and the position of Layer E in the Mugharet el-Wad confirms this. A few bone points were found in E; these are made from a metacarpal or metatarsal of goat or gazelle, with

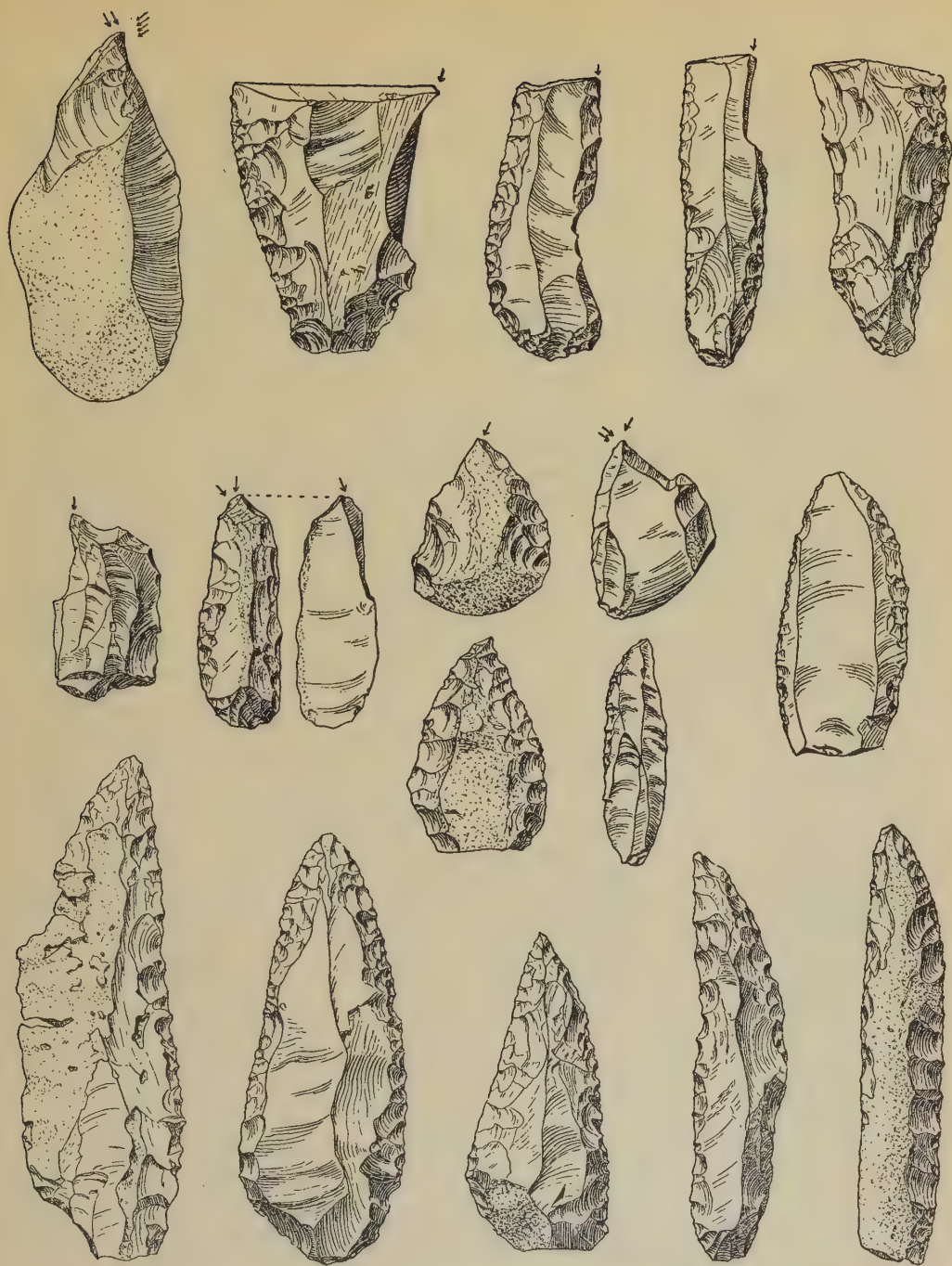


FIG. 4. MUGHARET EL-WAD: MIDDLE AURIGNACIAN, LAYER D

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the articular surface of the distal end left untouched. Two human jaws and some skull fragments were found in this layer, and according to Keith they do not differ markedly from the Natufian type.

Layer F contains an industry which I believe to be the earliest Aurignacian of this region. Unfortunately the layer had been much disturbed by water action, and considerable admixture had taken place with the underlying Mousterian bed. It is not difficult, however, to separate the material which belongs to the Upper Palaeolithic level proper, and although not very striking in appearance it is of considerable interest. The graters from F are massive, and a number of double-ended specimens show a peculiarity which is rare in the overlying layers. The graver-facets from both ends break short abruptly, leaving a projecting 'stop' or bar about half-way down the side of the tool. In addition to the graters there are end-scrapers, some very small and delicate. The most important feature however is a small group of leaf-shaped points, with careful retouch at the base of the bulbar face. Here at last is a definite link with Africa; these points are unknown in Europe, but they occur in the Aterian of North Africa, though I am not aware that they have ever been described. Mr Burkitt having drawn my attention to a well-made, perfectly typical specimen in the Cambridge Museum from the Aterian station of Tabelbalat, in the Sahara, I have named this implement the Tabelbalat point. I do not think that the industry of Wad F can itself properly be called Aterian, since the typical tanged point is missing, but the presence of Tabelbalat points is a definite link with the Aterian, and confirms the position of this culture at the base of the Upper Palaeolithic, already demonstrated by Miss Caton-Thompson as a result of her work at Kharga.

The fauna of the Aurignacian layers of the Mugharet el-Wad has been studied by Miss Bate, who considers that it indicates a change from a wooded to a more open country in the course of the Upper Palaeolithic, for while in the lower layers *Dama Mesopotamica* occurs with gazelle, at the top of the deposit gazelle, a typical desert dweller, is more plentiful than any other species.

Underlying Layer Wad F is the Upper Mousterian deposit, which rests on the bedrock of the cave, but it has been much disturbed by water action, owing to the presence of a spring at the back of the cave, and many of the flints are heavily abraded. In the Tabūn, on the other hand, the Upper Mousterian layer is very thick, and completely undisturbed, and provided a much better illustration of this stage.

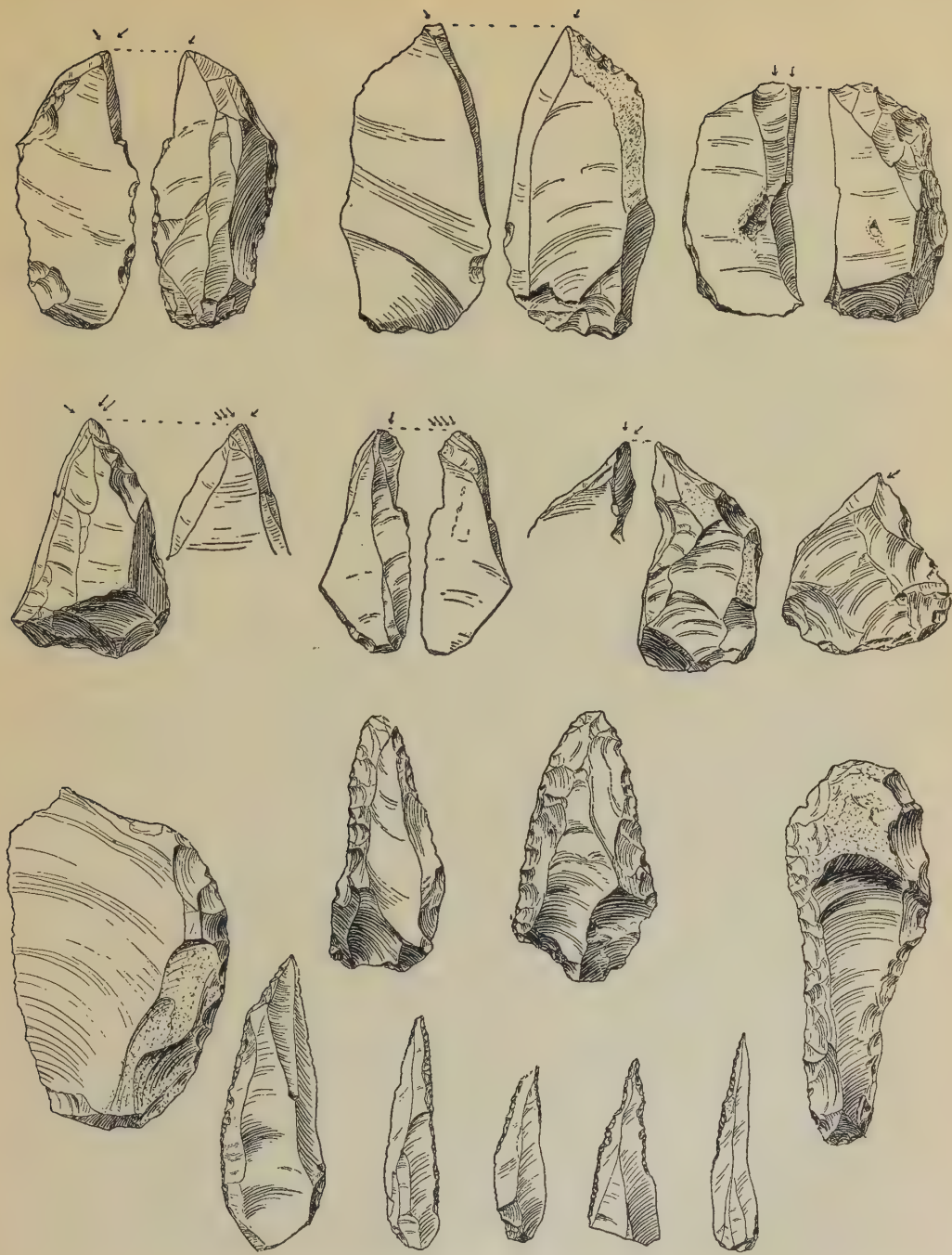


FIG. 5. MUGHARET EL-WAD: MIDDLE AURIGNACIAN, LAYER E

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Before excavation the Tabūn appeared to be quite small, and I thought it might be possible to finish it in one season. It has turned out, however, to be the largest cave of the group, with a very great thickness of deposit.

Layer A was uninteresting, containing much less material than Layer A in the Mugharet el-Wad. The sherds range from Early Bronze to modern Arab, and a small number of Natufian flints were found. This site was not inhabited in Upper Palaeolithic times, and immediately below A we get the Upper Mousterian in Layer Tabūn B. That differs considerably from the Upper Mousterian of Europe. It is definitely in the Levallois tradition, with numbers of small triangular and oval Levallois flakes. (FIG. 8). The points and scrapers have a very beautiful flat retouch, and resolved flaking is rare. Gravers occur in small numbers, and some of these are indistinguishable from Aurignacian forms. The animal remains in this layer consist almost entirely of two species of deer; *Dama Mesopotamica*, which is very abundant, and a species of red deer, and this fauna points to forest conditions, with a considerable rainfall.

Layer Tabūn C I have placed in the Lower Mousterian, because, for reasons which I shall explain later, I believe it to date from the latter part of the Riss-Würm interglacial. We are still in the Levallois tradition, and the most typical and abundant form is the oval Levallois flake, often of very large size. Triangular flakes are very rare, and in relation with this is the fact that points are much less abundant than scrapers. A small number of gravers was found, and some of these are indistinguishable from Aurignacian specimens.

The fauna of Tabūn C is very abundant, and points to warm swampy conditions, with a heavy rainfall. Miss Bate has identified rhinoceros (allied to *Rhinoceros hemitoechus*), hippopotamus, crocodile and a very large fresh-water tortoise.

A nearly complete human skeleton was found in the upper part of the layer, and 90 cm. below it, at the base, was a well-preserved lower jaw. The skeleton is of a type closely related to the Neandertal, but with certain well-marked peculiarities. It belongs to a small person, almost certainly a woman, and has a low cranial capacity. The frontal torus is very massive, and the mandible is shallow and receding, with no trace of a chin. The mandible found at the base of the layer, on the other hand, is deep and has a well developed chin, and at first sight presents a striking contrast to the other. Sir Arthur Keith, however, having regard to the characters of the teeth and other details, considers that the two represent extreme variations of the same race.

PLATE I



FIG. 6. WADY AL-MUGHARA : GENERAL VIEW LOOKING SOUTH

PLATE II



FIG. 7. SICKLE-HAFTS, LOWER NATUFIAN, MUGHARET EL-WAD

PLATE III



FIG. 8. TAĀBŪN: UPPER MOUSTERIAN, LAYER B
POINTS AND SCRAPERS

PLATE IV



FIG. 9. TABŪN; ACHEULEO-MOUSTERIAN, LAYER Ec
HAND-AXES OF LA MICOQUE TYPE (scale cm.)

PLATE V



FIG. 10. TABŪN: ACHEULEO-MOUSTERIAN, LAYER Eb
HAND-AXES (scale cm.)

PLATE VI



FIG. 11. TABŪN: ACHEULEO-MOUSTERIAN, LAYER E_B
POINTS AND END-SCRAPERS OF UPPER PALAEOLITHIC TYPE

PLATE VII



FIG. 12. TABŪN: ACHEULEO-MOUSTERIAN, LAYER EB
SCRAPERS, UPPER PALAEOLITHIC TYPE (scale cm.)

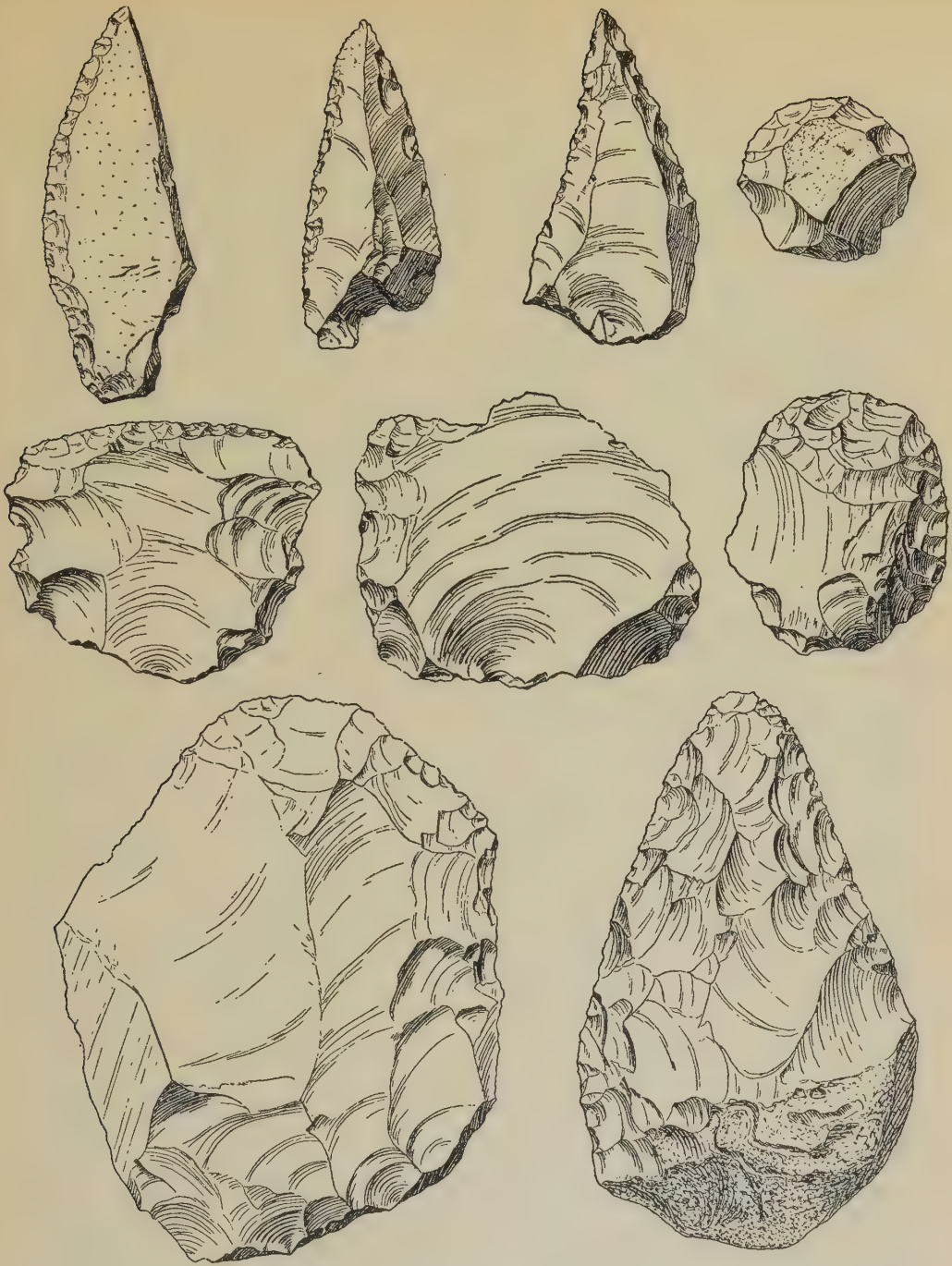


FIG. 13. MUGHARET ES-SKHUL: LOWER MOUSTERIAN

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Here I must refer to the Mugharet es-Skhūl, since the single archaeological layer present in that site corresponds to Tabūn C. (FIG. 13). The excavation of the Mugharet es-Skhūl was entrusted to Mr T. D. McCown, of the American School of Prehistoric Research, and in the course of two seasons (1931-2) he unearthed the remains of nine individuals, lying at the base of the layer, close to the bedrock, and enclosed in an intensely hard bone-breccia. Three of these skeletons (two of adults and one of a child) have been sufficiently cleared to allow some idea to be formed of their physical type, but it is still doubtful whether they belong to the same race as the Tabūn skeleton and mandible. Both the adult skeletons have mandibles with well-developed chins, and well developed skulls with a fairly high vault, in contrast with the low-pitched skull and chinless mandible of the Tabūn skeleton.

The fauna of the Mugharet es-Skhūl is substantially the same as that of Tabūn C, with the addition of a single tooth of wart-hog, which confirms the conclusions as to climatic conditions already based on the presence of rhinoceros and hippopotamus, and shows that the way was open for an interchange of species with Africa.

To return to the Tabūn ; the layer underlying C—Tabūn D—contains an industry of Levallois tradition, which is not unlike that of Tabūn B. The triangular flake is much more abundant than in C, and in consequence there is no marked disproportion in the number of points and scrapers ; at the same time, the broad flake is much smaller than in C. A fair number of points have retouch on the bulbar face, and some of these approximate to the Bambata and Still Bay types.

The fauna of D is much less abundant than that of C, but it seems to point to similar conditions, both rhinoceros and hippopotamus being present. At the same time the other species present are very varied, and seem to call for a varied topography. Miss Bate suggests that there must have been permanent rivers of some size, with the low country consisting of open grassy plains and bordered by wooded hills ; a great contrast with the Palestinian landscape of today.

The three layers I have just described, Tabūn B, C and D, although they undoubtedly cover a long period of time, contain flint industries that are fundamentally alike. All belong to the Levallois tradition, and they differ from each other mainly in such matters as the size of the implements, and the relative abundance or scarcity of certain types. With the transition from D to E comes a complete change. In the place of the scrapers on flat flakes with prepared striking platform, we get a very large number of thick scrapers with resolved flaking, the majority

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made on flakes with plain striking-platform, in some cases of definite Clactonian type. There is a great variety of shapes ; pointed, elliptical, fan-shaped, triangular, etc. Associated with these are hand-axes, the majority pear-shaped, and often rather rough. Hand-axes are not unknown in Tabūn B, C and D, but they are extremely rare, and in some cases have the appearance of being derived from other levels ; in Tabūn E, on the other hand, the proportion of hand-axes to scrapers is about 10 per cent.

Layer E is very thick, and has therefore been subdivided into Ea, Eb, Ec and Ed, but the differences between these divisions are in most cases not very marked. On the whole Ea contains the largest and best-made implements, Ed the smallest and least well-made, but the transition is gradual, Ec, however, is marked out from the others by the character of its hand-axes. In Ea, Eb, and Ed the hand-axes are generally pear-shaped and on the whole rather roughly made ; in Ec we get hand-axes of true Micoquian type, broad at the base with fine tapering points, often excessively sharp. (FIG. 9).

I have named the industry of Layer Tabūn E, Acheuleo-Mousterian, though I am not entirely satisfied with this label. The flake-industry is certainly Mousterian of a kind ; it is reminiscent of High Lodge, though probably later in time, and must lie somewhere on the line which leads from the true Clactonian to the Mousterian of the French caves. The hand-axes are generally rougher than those of the true Acheulean (FIG. 10), and the majority have undoubtedly been made with a stone hammer, but the presence of a characteristic Micoquian horizon is a definite link with the final stages of the Acheulean, and I see no reason to suppose that it is not roughly contemporary with the Micoquian of Europe. The Acheuleo-Mousterian of the Tabūn must I think be added to that group of industries rather unsatisfactorily labelled pre-Mousterian which appear in the course of the Riss-Würm interglacial (for instance, Ehringsdorf, Krapina, Grimaldi) and which are more or less ancestral to the typical Mousterian of the first Würmian maximum.

A very interesting feature of Tabūn Eb is the presence of a group of implements of Upper Palaeolithic type. (FIGS. 11-12). These include Chatelperron points, end-scrapers and graters, and a whole series of narrow blades with nibbling retouch of the edges. There can be no doubt that these implements are perfectly in place ; the great thickness of the overlying deposits rules out any possibility of their being a later intrusion. The whole technique of their manufacture is in marked contrast to that of the typical implements of this layer, and I consider them to be due to contact with a very early Aurignacian rather

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than a development *in situ* of the Acheuleo-Mousterian industry. Dr Leakey has found Acheulean tools associated with a primitive form of Aurignacian in East Africa in a deposit older than that of the Tabūn, and there seems to be no doubt that the origins of the Upper Palaeolithic must be sought a very long way back. Part of the shaft of a human femur was found in Tabūn Ea. It does not give us much information about the individual to whom it belonged, but as far as can be judged it is of Neandertal rather than of modern type.

The fauna of E is less abundant than that of the upper layers, and the remains collected cover only Ea and Eb. The reason for this is that the deep levels have only been reached in a trench which does not extend to the walls of the cave, and has therefore missed the area close to the rock where bone is usually best preserved. When the trench is extended next season I hope to add considerably to the fauna of the deep layers. Up to the present the great majority of remains belong to fallow deer, though ox and gazelle are also represented. No rhinoceros or hippopotamus has been found. This fauna suggests a wooded habitat, but Miss Bate reserves her opinion, as the collection of bones is small.

The industry of Layer F, I consider to be true Upper Acheulean. The hand-axe predominates all through, and towards the bottom scrapers and points become more and more uncommon. The hand-axes are on the whole better made than those of E, and there are one or two true ovates, though the pear-shape still predominates. The true La Micoque type is very rare.

No fauna has yet been found in F, but as in the case of Ec and Ed, I hope this may be remedied next season.

Underlying F is our oldest layer, Tabūn G, which rests immediately on the bedrock. This contains an industry of miserable appearance, almost entirely composed of small utilized flakes, the majority with plain striking-platform. There are no hand-axes, and very few of the flakes show secondary working. It is closely comparable with that found by Peyrony in the middle layers of La Micoque, well below the level of the Micoquian hand-axes. Breuil considers this industry to be derived from the Clactonian, and has named it Tayacian. He places Tayacian I at the end of the Mindel-Riss interglacial and Tayacian II at the beginning of the Riss-Würm. Tabūn G appears to correspond to Tayacian II, and its position in the sequence at the Tabūn agrees with the La Micoque section, as well as with that of Castillo, where a Tayacian layer occurs below the bed containing Acheulean hand-axes.

This closes the sequence at the Wady Mughara, and the question

THE STONE AGE OF PALESTINE

at once arises :—Is it complete for the period which it covers, or are there gaps ? This cannot be answered quite definitely at present, but the evidence is in favour of its being complete as far as the Palaeolithic proper is concerned. The layers follow each other without any visible trace of a hiatus, and nothing has been found elsewhere in Palestine which does not fit into this sequence. The only place where a gap may probably occur is between the Upper Aurignacian and the Lower Natufian ; that is, between Wad c and Wad B2. The appearance of the deposits suggested that Layer c, which was rather hard, might have been in position for some time before B2, which was very soft, was deposited. Evidence from other places also points to the existence in Palestine of a microlithic industry of Capsian affinities which probably fills this gap.

For the oldest stages of the Palaeolithic we must look outside the caves, and our information is very incomplete because until quite recently the Chellean and the older stages of the Acheulean were found only on the surface. Sir Flinders Petrie, however, has now found Acheulean ovates *in situ* in a silt not far from Gaza, and more recently still Breuil and Neuville have found Chellean and Acheulean tools in deposits in the Baqa'a near the Jerusalem railway station. When these finds have been fully worked out we may hope for more light on the chronology of the earliest stages of the Stone Age in Palestine.

I will now indicate how discoveries made elsewhere in the country fit into the framework established at the Wady Mughara. Before the excavation of the Tabūn, Neuville had already found Upper Acheulean deposits, with Tayacian underneath, in the cave of Umm Qatafa, some miles south of Bethlehem. Since then, in the same region, he has identified Mousterian levels corresponding to Tabūn B and D, Aurignacian corresponding to Wad D and E, and Upper and Lower Natufian. The Upper Mousterian and Upper Natufian are also known from my own excavations at Shukba in Western Judaea, and at Kebara Turville-Petre found Aurignacian levels corresponding to Wad D and E. I have recently re-examined the material from Turville-Petre's excavations in Galilee, in order to see how they fit into this framework. The Upper Palaeolithic of the Mugharet el-Emireh appears to correspond with the Lower Aurignacian of Wad F ; it contains Tabelbalat points, dos rabattu knives, and small end-scrapers, all typical of Wad F. In the Mugharet ez-Zuttiyeh, the Galilee skull cave, I found that instead of a single Mousterian industry, as was originally supposed, there were two, of quite different types. One appears to correspond to Tabūn B, Upper Mousterian ; the other is identical with the Acheuleo-Mousterian

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of Tabūn Ea. It is not possible to decide to which of these stages the Galilee skull belongs, but there appears to be no doubt that it is of the same race as the Mousterian men of the Wady Mughara.

All that now remains is to consider the question of dating. The evidence for this has not yet been completely worked out, but a tentative scheme can be put forward. As I have said, I can see no reason to suppose that the Tayacian and Acheulean levels of the Tabūn are not roughly contemporary with those of Europe. Even if we take the shortest admissible chronology, this places them in the Riss-Würm interglacial, and if we accept the longer dating of Breuil and Koszłowski, at the beginning of the Riss-Würm. This agrees with the faunal evidence, indicating subtropical conditions in Tabūn c and d, which presumably coincide with the interglacial maximum. Dr Leakey has drawn my attention to the interesting point that the prevalence in east Africa of the dry conditions of an interpluvial would involve a northward shift of the African rain-belt, and the northward migration of African fauna, leading in Palestine to an increased rainfall and the arrival of African species ; precisely the conditions realized in Tabūn c and d. The return to forest conditions in Tabūn b may be correlated with the oncoming of the first Würmian maximum, since a temperate climate with fairly heavy rainfall is precisely what we should expect in the Mediterranean region when glacial conditions prevailed in Europe.

These conclusions are provisional, but they appear to fit the evidence. The Mousterian skeletons of the Skhūl and the Tabūn are placed in the Riss-Würm interglacial, and would therefore be considerably older than the Neandertal remains of La Chapelle-aux-Saints, La Ferrassie, Spy, Gibraltar, etc. They would, in fact, be roughly contemporary with those of Ehringsdorf and Krapina.

The work carried out has been possible only by the collaboration of the two institutions most closely concerned. Mr T. D. McCown of the American School, who is more especially associated with the discovery of the Skhūl skeletons, was Acting Director during my absence one season.

I have to thank my assistants in the field, officials of the Palestine Department of Antiquities, members of other archaeological Expeditions (especially Mr P. L. O. Guy, Director of the Megiddo Expedition of the Oriental Institute), experts who helped to work out results, and the following for grants and donations : the Royal Society, the Percy Sladen Memorial Fund, the Wörts Fund, the British Association, the Anthony Wilkin Studentship Fund, Sir Robert Mond, and other private donors.

The Problem of the Hermes of Olympia

by W. L. CUTTLE

ut quidam artifices nostro faciunt saeculo,
qui pretium operis maius inveniunt, novo
si marmori adscripserint Praxitelem suo . . .

PHAEDRUS.

PRAXITELES worked from perhaps about 370 B.C. to about 330 B.C. : he was a prolific sculptor, both in bronze and marble. To him was ascribed the chief part in the introduction of a psychological interest into Greek statues, whereby they became individual rather than typical : he exaggerated the slimness and the curvature of the human body, and employed in a certain measure the technique of impressionism. These general characteristics were long recognized in a number of copies of his works, which were much appreciated by the Romans.

About A.D. 174 Pausanias, compiling his guide-book to Greece, visited Olympia and saw there in the Heraeum a marble group which he described as a 'Hermes carrying the infant Dionysos : the work of Praxiteles'. This is the only reference in ancient literature to such a work by that sculptor.

On 8 May 1877, the German excavators of Olympia found upon the spot indicated by Pausanias the statue (PLATE I) which forms the subject of this paper ; after a little initial scepticism and dissatisfaction, it was accepted and officially described as 'The Hermes of Praxiteles', and for some fifty years was almost universally regarded as such ; it further enjoyed the unique distinction of being described as 'the only . . . undisputed original, straight from the hand of one of the greatest masters of antiquity',¹ and as such it enjoyed an easy vogue with those who were glad to admire a work which had received the *imprimatur* of expert approval and which Furtwängler himself had described as 'the undoubted original'.²

¹ E. A. Gardner, *Handbook of Greek Sculpture*, p. 388.

² *Masterpieces of Greek Sculpture*, English edition, p. 3.

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In 1929 Dr C. Blümel published his *Griechische Bildhauerarbeit*, a study, based on practical experience, of the technical methods followed by Greek sculptors of the archaic and classical periods. With the main portion of that most important contribution to knowledge we are not now concerned ; but as a pendant to his conclusions he added a vigorous claim that the Olympia Hermes-group is not in fact an original by Praxiteles, but a copy made to replace an original which had been removed from Olympia by the Romans.

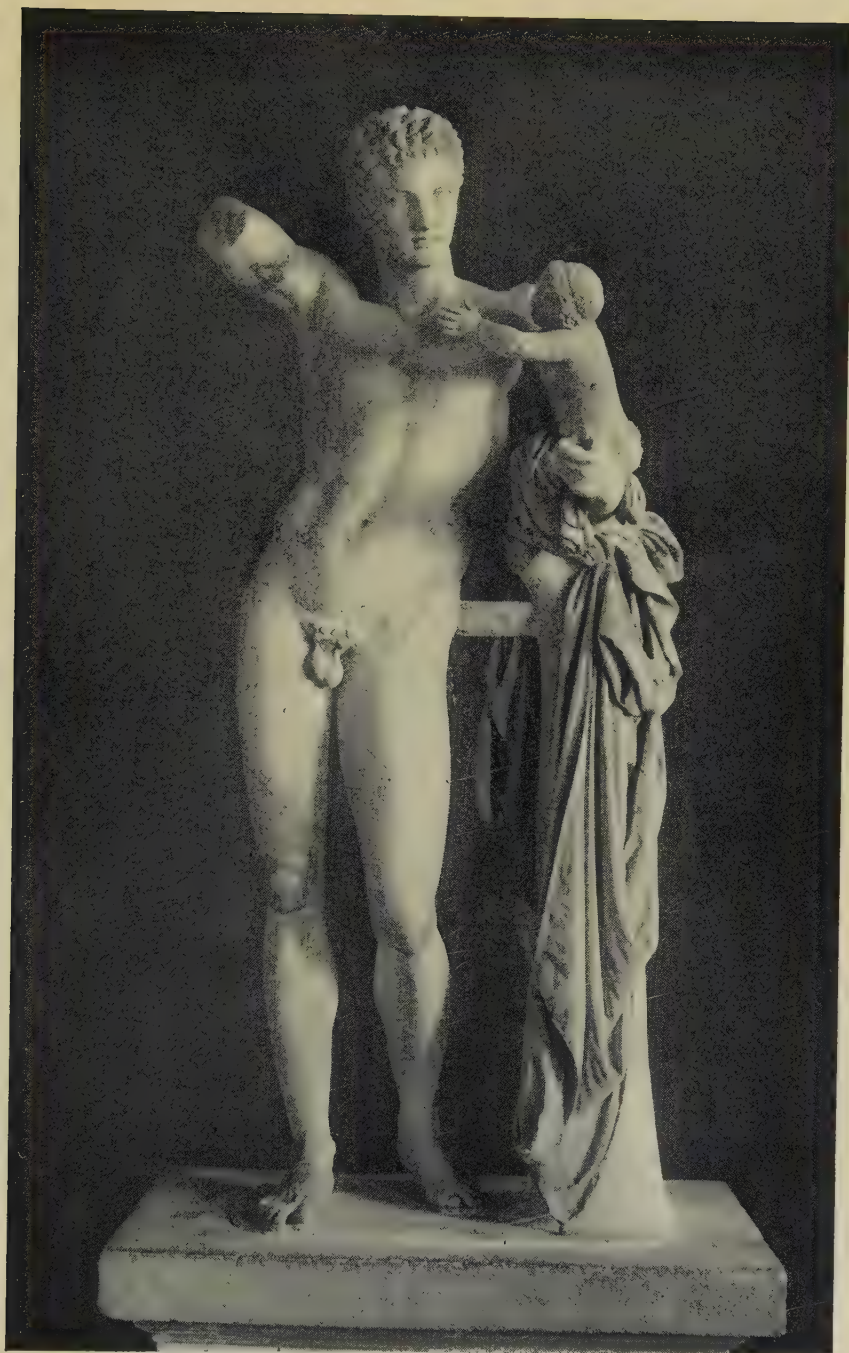
To this disturbing claim Miss G. M. A. Richter, the Curator of Classical Art in the Metropolitan Museum of Art in New York, made a trenchant reply in her review in the *American Journal of Archaeology*, 1929, xxxiii, but the matter remained, and is, *sub lite* ; a number of authorities contributed their views to a discussion in a subsequent volume of the same journal,³ and the Hermes is in the position of a warrior in the Iliad, 'mighty, mightily fallen', about whom the contestants struggle, pulling him now that way, now this in their anxiety to claim for themselves what is left of him in the end. On the one side we have Dr Blümel ; on the other Miss Richter, with whom range themselves Mr Valentin Müller and Professor Dinsmoor ; on the other side comes Professor Rhys Carpenter, and tries to deprive the Hermes of his drapery : the attempt is resisted by Mr Müller. Mr Casson, hovering round the conflict between the two original combatants, sounds at first a neutral note, but proves a strong supporter of Dr Blümel.

To tell the beginnings from which this wrath arose : Dr Blümel showed in the main part of his work that the Greek sculptor from the 6th to the 4th century cut his statue out of the block by means of the *point*,⁴ layer by layer, working at it evenly from front and back and from the two other chief view-points ; gradually seeing the forms grow, as it were, beneath his hands out of the husk which he was patiently shelling off. This is not the place to describe at length the evidence for this well established conclusion ; suffice it to say that Blümel's study was based primarily upon examples of statues which, for various reasons, had been left unfinished, showing clearly the nature of the tools which had been used upon them, and the way in which their makers had set to work. Sometimes the archaic sculptor employed also the

³ *A. J. A.* 1931, xxxv, 249 ff.

⁴ Or 'punch' : the name 'pointed chisel' is erroneous : see Casson, *The Technique of Early Greek Sculpture*, pp. 169 ff., for the names of tools employed by sculptors.

PLATE I

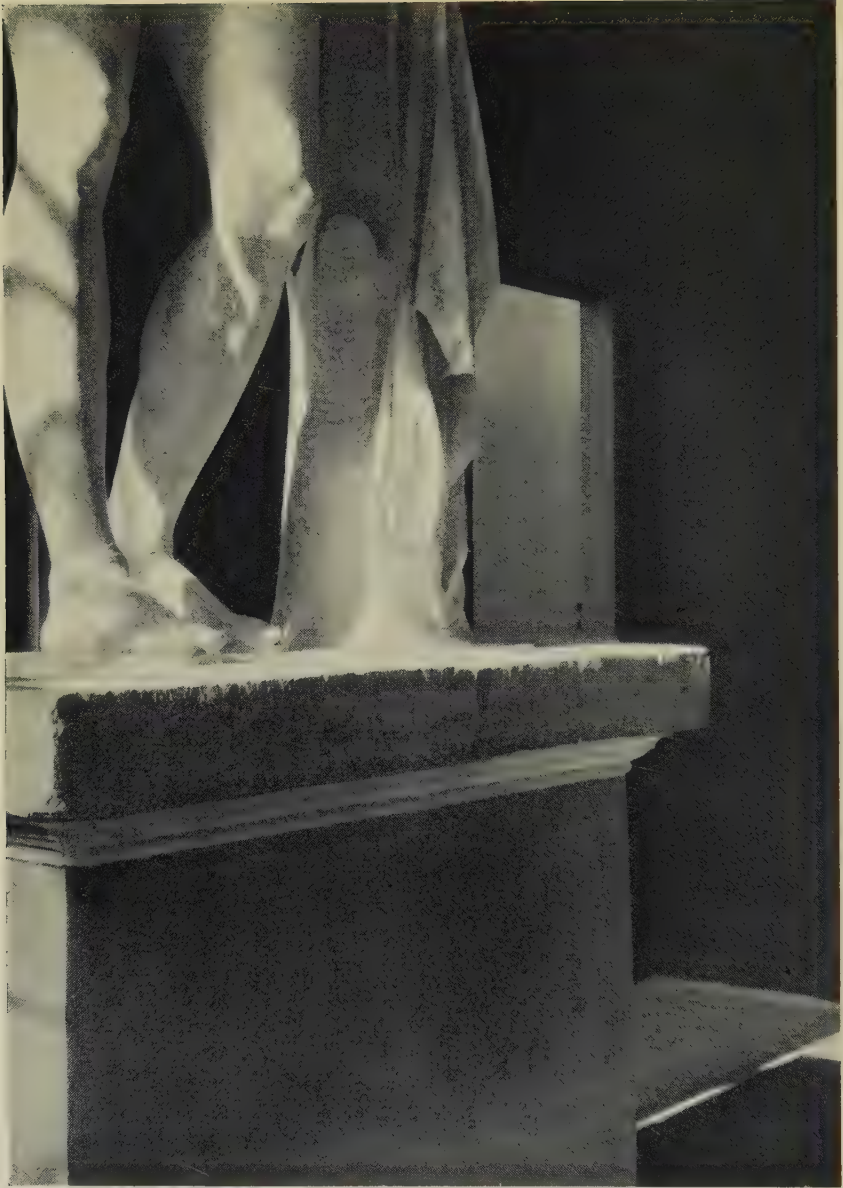


THE HERMES OF OLYMPIA

By permission of The Hellenic Society.

(Restorations: legs (below knees) and left foot of Hermes: left arm of child)

PLATE II



LOWER PART OF HERMES OF OLYMPIA
showing grooving of tree-trunk
Ph. W. L. Cuttle

PLATE III



PINE-TREE (*Pinus halepensis*) AT OLYMPIA
Ph. W. L. Cuttle

PLATE IV



THE BACK OF THE HERMES OF OLYMPIA

From C. Blümel, Griechische Bildhauerarbeit.

By permission of Walter de Gruyter and Co.

THE PROBLEM OF THE HERMES OF OLYMPIA

claw-chisel, which is virtually a multiple fine point ; generally he used it subsequently to the point. The final polishing was done with an abrasive—not with a chisel. It was only in Roman times that a *flat chisel* was used, whose strokes produced even planes, precise but sharp : an aid to sculptors concerned with the portrayal of individual traits, but the death of those warm and delicate nuances of contour which were characteristic of the more patient and more generalized art of the Greeks.

The flat chisel was only used in this art for such purposes as to cut prominent locks of hair or zigzags of drapery, whose sharp edges could not be produced with a point. Similarly, the *gouge* was used for cutting out long rounded furrows in drapery ; but never for the nude body.

These methods continue in the early classical period : the final polishing, by means of an abrasive, comes immediately after claw-chisel work, occasionally after point work : the flat chisel is never used for this purpose. A *simple drill* was used for the Olympia pediments ; also a *rasp*, usually preparatory to the application of paint.

Nor is there any material change in the years that follow : the invention of the *running drill* (applied to the Parthenon frieze and pediments, and especially to the sculpture of the Nike Balustrade) as time went on wrought important changes in the drapery, in the hair, in facial details even : but still the chief part was played by the point and the claw-chisel, and the statues were hewn from the block by the same slow and patient 'husking-out' process : nor are there any important changes in the making of sculpture in the round of a high class until late in Hellenistic times.

But in the 4th century stone-cutting of a more commonplace kind—for example most of the grave-reliefs—begins to show signs of yielding to the temptations of time- and labour-economy offered by the use of the flat chisel and rasp for polishing. Generally the nude forms held fast by the old technique of point, claw-chisel and abrasive stone : and we are still very far from the thoroughgoing practice of Roman times, when the greater part of the work was usually done with the flat chisel or gouge alone, followed by polishing which obliterated the very last traces of the tool-work.

A tendency to desert the best technique is first to be detected, according to Blümel, in a series of unfinished statues found at Delos and Rheneia. While still mainly in the old tradition, they betray an exaggerated use of the claw-chisel which approaches very nearly in effect to that of the flat chisel. Moreover, the occurrence side by side

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of very different stages of chisel work shows that now the statue was no longer regularly evolved in the round from the block ; front and back were being separately cut, and sculpture in the round was being arrived at by way of relief technique. The adjustment to each other of the parts thus separately conceived was secured by a system of measurement from fixed points. The importance of the change which had taken place—which is developed fully by Blümel—lies largely in this : the flatter designs with which the sculptor was concerned, in place of the rounded swellings and recesses of the punch-produced earlier works, led naturally, *via* the use of broad claw-chiselling, to the extensive employment of the flat chisel. At the same time, the tendency to regard during cutting separate *parts* of a statue and not the *whole* (a tendency aided by the growth of measurement by point-taking) fostered the multiplication of struts which joined these different parts together and strengthened them during working. Such struts, while at all times used in Greek sculpture, hindered the old process of cutting the statue regularly in the round, and were as far as possible avoided, both for this reason and as artistic intrusions ; when unavoidable, they were placed in unobtrusive positions, concealed wholly or partially from the spectator.

Obviously, it would be of the utmost importance for the history of ancient sculptural technique, if the date of these Delos-Rheneia figures could be determined. They have been placed in the 4th century ; but Blümel argues convincingly for a Hellenistic date, and perhaps for one so late as the first quarter of the 1st century B.C.

It is certain that Greek sculptors used models of some kind, at any rate when several men worked under one master's direction in the making of decorative sculpture : the size and nature of the models are not determined. For translating the models into stone an elementary form of measurement was used, but nothing comparable with the elaborate point-taking by which most modern works of stone sculpture are reproduced by assistants from the clay originals which are made by the sculptor himself. From the translation of a master's models into stone statues, such as we have to suppose took place when temple sculpture was made by contract, to the reproduction by copyists of single masterpieces and the multiplication of such copies, is a step which was bound to be taken when the demand arose for it. That there was a keen demand of this kind under the Roman Empire, when not even the wholesale depredation of Greek originals could satisfy in a small degree the craving for statues, is common knowledge. The filling of

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it created an army of copyists, whose skill and artistic sense varied, but whose technical methods were based upon their desire to produce their copies as quickly as possible.

This condensed account of Blümel's argument brings us to the first stage of what may be called the problem of the Hermes of Olympia. Examining that work, Blümel found no less than eight reasons for regarding it as not an original by Praxiteles : each of them strong in itself, and all of them in combination irresistible, he claimed. Six of these points are directly concerned with technique : they are (1) the unfinished state of the back parts of the group, including Hermes himself, the drapery, and the tree-trunk, (2) the fact that the group was cut first from the front and then from the back, not regularly hewn out from all sides, (3) the use of flat chisel and gouge on the nude parts, (4) the use of the (running) drill for the hair, (5) the use of the gouge on the tree-trunk, and (6) the use of the obvious and intrusive strut. To these points, whose connexion with the main thesis of his book is clear, he added one purely subjective argument : the resemblance (to his eyes) of the Hermes to certain named 'copies'. This argument must be omitted, for the question to which an answer is required is precisely this : How, *i.e.* by what technical criteria, are we to recognize a copy when we see it?—and two of Blümel's 'copies' are regarded by others as Greek originals, and thus may now join the Hermes in the ranks of 'suspects' ; but they cannot be used as evidence against the Hermes. Lastly, as has long been recognized, the basis upon which the Hermes is set belongs, by its style, certainly not to the 4th, but to the 1st century B.C. The common explanation of this is that the group was brought into the Heraeum from some other place, and was then set upon a new basis.

Professor Carpenter sought to carry the attack further. Convinced of the truth of Blümel's theory, he looked to the drapery to supply the incontrovertible proof of it. He laid down that drapery in Greek sculpture was originally a mere linear and superficial addition to a simple atelier-form, having little or no plastic existence of its own ; that, although towards the end of the 5th century a fundamental change occurred, whereby the linear forms, hitherto the *furrows*, became the *ridges* between the furrows, yet the linear tradition persisted well into Hellenistic times ; the Mausolus and Artemisia [*c.* 350 B.C.] are early examples of works in which plastic independence at last begins to inform the drapery, yet they show scarcely any departure from the

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geometry of linear forms. Naturalism in drapery virtually begins with the great frieze of Pergamon [c. 180–160 B.C.], in which the drapery has an independent entity of its own. It was left to Roman realism to complete the process, and this explains why Blümel found his closest parallel for the drapery of the Hermes in the 'Germanicus' of the Louvre. The nude Hermes and his drapery, analysed purely in terms of plastic evolution, are nearly 500 years apart. How is this to be explained?

Professor Carpenter explains that the Asiatic schools of the 2nd century B.C. created certain mannerisms in the representation of drapery, which were stereotyped by the Roman copyists—'finger-prints', 'zigzags', and 'countersunk frets', as he calls them. He finds the drapery of the Hermes permeated with these mannerisms, which, coupled with the extreme naturalism, convince him that the statue is not only not a 4th century Greek original work, but also that, so far as its drapery is concerned, it is not even a Roman copy of a Greek original: the Hermes is a Roman copy of a Greek nude figure, with the drapery introduced as an addition by the copyist and rendered in the style and technique of his own time. The Greek original which he copied was not of marble, but of bronze; the tree-trunk (with its enveloping drapery) did not exist: unnecessary for support in a bronze work, it was added in the customary manner in the copy executed in the less sturdy material. Nor, of course, was there a strut in the original: the statue, *minus* tree-trunk and drapery, stood in a magnificent chiasmic Praxitelean pose, of such daring as we have learned to expect from the bronze boy recovered from the sea in Marathon Bay in 1925. The hair is a somewhat summary imitation of 4th century bronze work. The high polish seeks to imitate the sheen of bronze.

Such, omitting for the present a number of points, is Professor Carpenter's view of the Hermes: a Roman copy to which the copyist has given a garment.

Before considering the replies and counter-replies which have been provoked by these theories, it is necessary to describe the statue more closely. With its general appearance everybody is familiar; but in order to see most of the peculiarities which have rendered it open to attack, it is desirable to go to Olympia: the ordinary illustrations do not show them. They show the much admired polished surface, the highly naturalistic drapery thrown over the tree-trunk upon which Hermes leans his left elbow, as he supports the child upon his arm: the stout horizontal strut which joins the tree-trunk to his hip. The

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back view is less well known (PLATE IV). The whole of the back (including the drapery and the tree-trunk) has been far less thoroughly worked than the front. Upon the back of Hermes himself we are confronted also with the very obvious and disfiguring marks of a treatment apparently designed to 'correct' a musculature which appeared somewhat too round: and no attempt has been made to hide or to palliate the traces of this 'corrective' treatment, which has left the surface as it were scarified with the legacy of a loathsome disease. Such a comparison springs easily to the mind, since the front of the figure is finished in so naturalistic a manner and presents the similitude of a perfect skin. This rehandling was, of course, noted from the first: Treu described it fully, and ascribed it to the 'hand of the Master himself'; portions of the already polished surface have been removed with a claw-chisel, and the muscles have then been recut with a gouge. On the shoulder-blades the traces of point-work run below the finished surface; but further down, the marks of the claw-chisel appear underneath those of the gouge; and the latter occur plainly also on the right buttock.

Turning to other parts of the group as seen from the back, we find that the hair of the back of the head has been sketchily cut with flat chisel and gouge; Dionysos's drapery is little more than indicated, by the gouge; the tree-trunk, which in front displays horizontal gouge furrows, at the back is roughly cut with very strong point strokes; and Hermes's mantle and the adjacent strut have been left partially in the point stage of working.

The main question here is concerned with the summary condition in which the back of the group as a whole was allowed to remain, and the technique employed upon it: the recutting of the back of Hermes is to be kept separate from it; a precaution which has not been observed throughout the controversy. It appears from Treu's words, quoted by Blümel, and from Blümel's own comments, that the back of Hermes was originally cut in accordance with the impeccable classical technique; but that the subsidiary parts of the group—the tree-trunk and drapery—were only roughed out, and that by means which, if not unthinkable in the 4th century, are at least surprisingly careless. Blümel asserted that unfinished backs were exceptional in 5th and 4th century works, the rule in Roman works: Miss Richter replied that, on the contrary, such works as the Aegina and Parthenon pediments were exceptional; the backs of Greek statues, when not intended to be seen, were quite commonly left rough. An unfinished Roman back, on the other hand, is an exception rather than a rule. Mr Casson remarks upon this

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deadlock that both Blümel and Miss Richter have exaggerated ; he rightly points out that what we need is a 4th century free-standing statue ; the sculpture of architectural decoration, including grave-stelae, will not serve.

If I may add precision to arguments already brought forward, such works were produced under different conditions, as well as for different purposes, from those which governed the making of a free-standing statue in a master's studio ; they were the product of masons, assistants, journeymen, good craftsmen though they might be. Architectural sculptures were designed to be seen as part of a building, at a distance, not to be subjected to a close scrutiny : grave-stelae, as Casson says, normally had some kind of architectural background, and were in any case usually in their nature a mason's product. Of the two exceptional pedimental groups, those of the Parthenon stand alone as an example of the extreme wealth which the citizens of Periclean Athens lavished upon their patron deity out of the tribute paid by the subjects of their empire ; and the Aegina figures—somewhat far removed in time from the date of Praxiteles—are virtually separate figures in the round set in the gable each upon its own plinth. Pedimental sculptures may therefore be dismissed from the argument as *nihil ad rem*. The other works adduced by Miss Richter in support of the claim that the Greeks commonly left the backs of statues unfinished do not appear to me to be sufficient to prove the point for our purpose : Casson's dictum must hold good : that probably in the 5th and 4th centuries they preferred finished statues, but that there are exceptions.

To the contention that the Hermes was cut first from the front and then from the back, separately, Miss Richter replied with the argument which I have stressed above, that we must distinguish between the way in which the statue was originally worked and the 'corrective' treatment which it afterwards received. Apart from this 'correction', the back of Hermes (not of the hair, tree-trunk and drapery) is apparently impeccable. And Miss Richter makes a good point in observing that it is precisely in a Roman copy (produced by careful measuring processes) that such correction would appear to be unnecessary. Against this, Blümel points to the other parts of the group, left in the most various stages of working : which is exactly what a copyist would do. He declares that such 'correction' in the last stages would only be made by a copyist. And the strut, in the copyist's manner, entails separate working of front and back ; it is a barrier to homogeneous treatment.

Blümel's second point—the use of flat chisel and gouge on the nude

THE PROBLEM OF THE HERMES OF OLYMPIA

parts—is nicely rebutted by Miss Richter's reference to one of his own illustrations, a partially finished 4th century relief clearly showing such use of the flat chisel (as Blümel observes in his description) ; her other examples are chosen from works which were immediately available for her inspection, in America. Casson reduces Blümel's argument to a simple formula : ' No great sculptor of statues in the round used the flat chisel for *primary* work until Roman times ', which he says is probably true, and against which Miss Richter has no evidence. To me this portion of the argument seems to be on very uncertain ground : once we regard the Hermes as suspect, we lose our one outstanding witness for the practice of ' great ' sculptors in the 4th century ; and in the absence of other evidence of a convincing nature we must regard the point as quite unproven. Casson emphasizes the difference between the technique of high and of low relief, of which he says neither of the protagonists is aware : but Blümel clearly is ; he discusses it at p. 27 of his book. And when Casson says that for *low* relief the flat chisel was used ' for 200 years prior to the Hermes being cut ', he presumably means prior to the 4th century : perhaps when he wrote this sentence he did not feel so certain that the Hermes was cut in Roman times ?

The use of the drill on the hair is a no more certain criterion : for even if the parallels cited were to be regarded as copies (which would presumably be Blümel's reply), we have no grounds for refusing to believe that Praxiteles might not have used the (running) drill, first employed in the 5th century, for the hair.

The tree-trunk provides great difficulty. Casson carried this point further than Blümel, and demands an early prototype for the familiar copyist's trunk (best exemplified in the Naples Doryphoros) with its horizontal gouged grooves. Miss Richter replies that the Olympia tree-trunk is carved in the same technique, but with far more spirit and liveliness ; not with mechanical regularity. Now it has been noticed that the grooves are *horizontal*, not vertical as the corrugations of bark should be. However remote from direct observation of nature we may suppose most copyists to have been, we must assume that someone began this practice and set the fashion. I show a photograph of the Hermes's tree-trunk and beside it one of a pine-tree which I took close to the Museum at Olympia (PLATES II and III). Many of the smaller trees (and the trunk in the group, when reduced to its natural size in conformity with the magnified proportions of the figure beside it, will be that of a quite young tree) exhibit horizontal rings which precede the corrugation of the surface : no doubt a botanist would

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describe the process technically, and would state how far these horizontal rings are restricted to certain species. It is at least interesting to see in the tree-trunk of the group an impressionistic representation (originally no doubt helped by paint) of the stem of a young *Pinus halepensis*; and I see no reason why we should not, if we wish, see in this particular trunk the prototype of the horizontally grooved trunks of innumerable Roman copies. But of course the point is not proved. (It is for the present assumed that the trunk is to be considered along with the figure, and not separately, as Carpenter's theory demands).

Nor would it be unfitting for a pine-tree, the attribute of Dionysos, to be selected for such a group: though indeed a Greek sculptor would be likely in any case to choose so common a species.

The strut, again, has given great difficulty; it cannot be denied that its presence is objectionable, to our eyes at any rate. Blümel declared that there is no evidence for the use of visible struts in Greek sculpture; the only other so-called originals which have them are of disputed date. Miss Richter replied that Praxiteles may well have used visible struts when his composition demanded them; in fact, he may have been the first to use them. Casson, however, denies the constructional necessity of the strut in this case; a sculptor assured him that it could have been quite safely removed. But in a land subject to earthquakes, would not sculptors have learned the danger of leaving delicate (Parian) marble figures precariously exposed to risks with which we are unfamiliar? It may be added, as Miss Richter says, that we must imagine the strut painted to match its background: the question, how far we must regard it as an artistic intrusion, is surely difficult to answer; artistic conventions which are accepted by one age may appear fantastic to another. I do not think the strut an insuperable barrier to a Praxitelean origin: I shall, however, return to it later.

The date of the base hardly helps us: Blümel placed it in the 1st century B.C. (not A.D., as Casson, p. 266, says), and supposed that it was contemporary with the statue, of which the original had been taken to Rome: he pointed to the official replacement of Praxiteles's 'Eros of Thespiai' by a copy, recorded by Pausanias. Casson adds the fact that the original base of Polykleitos's 'Pythokles' was found at Olympia, with the inscription recut at a later date, while a basis of Roman date, at Rome, has the same inscription. From this he infers that the original statue was taken to Rome without its base, on which another statue, perhaps a copy, was then set. Miss Richter prefers to think that the 'Pythokles' at Rome was the copy, as Furtwängler

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supposed. (We cannot tell). She further points out that the case of the Eros was exceptional; it was world-famous, considered by Praxiteles himself one of his masterpieces; and its removal was a severe blow to Thespiai, of which it was the chief attraction. In these circumstances a copy was officially provided, and Pausanias mentioned the fact precisely because it was unusual. We may observe, however, that there is no need to regard the Hermes as an 'official' copy.

Professor Dinsmoor's expert verdict on the base is that it is Hellenistic at the earliest, and most probably of the 2nd century B.C. The statue itself can hardly belong to that period, and was therefore presumably transferred from an earlier pedestal of the 4th century. This seems the more likely since the plinth of the statue itself has a clamp cutting unconnected with the present basis: nor indeed was its purpose to fasten the statue to any external object at all (Blümel thought it a temporary means of fixing it to a revolving table in the studio). Its object was rather to forestall cracking in the plinth, if not to mend an actual crack. The clamp itself may be Hellenistic or Roman: if, then, the flaw developed during carving, the statue must be Hellenistic or Roman; but since the basis is late Hellenistic rather than Roman, and since the statue is hardly a late Hellenistic copy, it seems more likely that the flaw developed when the statue was moved from an original basis to the present one.

With the theory of a removal agrees the fact noted by Miss Richter, that the statue was not seen to its best advantage in its place in the Heraeum (for which arguments are produced), and was presumably introduced from another place.

As for some of Blümel's minor points; it is said that it is very improbable that any original work by Praxiteles would have survived Roman depredation in a Greek sanctuary down to Pausanias's day. But Miss Richter rightly points to literary evidence of survivors (including the Aphrodite of Knidos, on Lucian's authority). Even if Pausanias mistook a copy for an original in this case, we cannot dismiss all his ascriptions as mistaken. He saw a number of statues in Greece which he described as works by Praxiteles. On the other hand, the Zeus of Pheidias and the Athena Parthenos are not comparable: they were colossal, chryselephantine, and very sacred: all of which facts would have militated against their removal. As for the execution of the child, subjective arguments apart, we may well regard it as an attribute rather than as a chief focus of interest. Nor indeed (to use a cliché) were the Greeks as yet actively interested in the childish form as such. Such

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an interest appears first (as we might expect) in grave-stelae, but does not reach major art until the time of Boethos.

I have dealt hitherto with Blümel's contention : Professor Carpenter's remains for discussion. Few people will be found, I think, who will accept his thesis *in toto*. One of the chief objections is the pose which the Hermes would be forced to assume if deprived of the drapery. Carpenter finds this magnificent and Praxitelean, but to others it will appear, as it does to Miss Richter, awkward and unnatural ; a pose which is incompatible with the weight carried upon the left arm, and which also, in the absence of a support, destroys the rule of balance invariably⁵ observed in Greek sculpture, whereby a vertical line drawn from the suprasternal notch of a figure carrying the weight of the body on one foot would touch the inner ankle-bone of the weight-carrying leg. It will be found that in the Hermes such a line would pass to the right of this point. In other words, if the Hermes is not leaning upon some support, he is behaving in a manner opposed to human experience : we automatically redress our own balance: the Greeks observed this in life and demanded it in art. Hence the fact that a *bronze* original could have stood without the support of the tree-trunk (and if the trunk goes, so does the drapery thrown over it) does not affect the issue ; the purpose of the trunk was not to ensure the stability of a marble figure copied from bronze : it was to ensure the stability of Hermes himself, in whatever material he might be represented, and to supply the visual balance which would have been lacking without it.

Nor does Miss Richter accept the description of the hair as a somewhat summary imitation of 4th century bronze tradition. She rightly contrasts it with the shallower treatment of the hair of the Marathon Bay bronze.

The core of Professor Carpenter's theory, however, is the drapery. Here he claims that he is adumbrating the critical methods of the future—*virginibus puerisque canto*, he says. Miss Richter admits the penetration of his analysis, but declares that he has confused a prototype with its descendant. We must expect to find, nearly a century after the execution of the Parthenon pediments, and at the time of the

⁵ See Miss Richter, *A. J. A.* xxxv, p. 280 : she can only find two exceptions—the Marathon Bay boy, which has lost its support, and some Roman copies of the Aphrodite of Knidos, where the apparent disregard of the rule is to be ascribed to faulty restoration of the feet.

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Maussoleum sculptures, a leading sculptor introducing those very innovations which were later to degenerate into mannerisms. And she contrasts their execution in known Roman copies with their freshness in the Hermes. She scores a point when she demonstrates that Carpenter's little loop of drapery over Hermes's forearm, which 'would alone date the garment as Roman', is in fact part of the child's mantle, and therefore occurred in Carpenter's hypothetical 'original'. However, in justice to Carpenter's theory, we may imagine that the copyist would allow himself to interpret what drapery he found to copy in the same manner as that which he decided to 'add'.

A fuller attack is delivered by Mr Valentin Müller. He adopts stylistic arguments. While the 'Germanicus' has a similar arrangement of folds to that of the Hermes, they are rendered quite differently. The Hermes has soft, gentle curves, with broad, large ridges: it secures its main effect by means of the large *planes*, the smaller folds being secondary: the effect is that of a very soft woollen stuff. The 'Germanicus' has narrow, sharp, nervous folds, with hard and generally pointed angles; its main effect is secured by the *lines* marked by the long ridges: the drapery appears to be made of stiff linen. Müller refers to G. A. S. Snijder's demonstration of the difference between the drapery of copies made in Roman times in Greece and of those made in Italy: a difference which may be defined cautiously by describing one style (the Greek) as 'plastic', and the other as 'linear'. The 'Germanicus' groups itself with the Ara Pacis and other works made on Italian soil. If we look, on the other hand, at statues of Roman date made in Greece, such as certain female figures in the Olympia museum, we still see a difference from the Hermes: the Younger Agrippina and the Domitia lack in their drapery the soft roundness of the Hermes's folds; the Agrippina has no large plane surfaces, while the Domitia's planes are not organically related to the ridges: the 'Regilla' (and other later statues, including Italian ones) has largely lost the sharpness, but succeeds only in giving the appearance of a soapy envelope, not of wool: and its compressed folds form deep artificial shadows which now have the same value as their enclosing ridges; in the Hermes the shadows are secondary and natural.

Müller's remarks on the mannerisms noted by Carpenter are in the same sense as Miss Richter's: that the presence of these details is to be observed in 4th century work, though not in the stereotyped form which they assume in Roman copies.

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In giving some account of the trend of the arguments which have been used on both sides, I owe both a word of explanation to the reader and an apology to those whose views I have attempted to reproduce. The subject is not one which can be seriously considered apart from the detailed arguments which have supported the general conclusions : I have tried to express the sense of these arguments, but it is not possible to dispense with the *minutiae* if a reasoned and independent judgment is to be formed. For these the reader is referred to the authorities whom I have quoted, while to those authorities I can only express the hope that in interpreting, and sometimes criticizing, their views I have not done, by compression or selection, undue injustice to them. That there are omissions I am well aware : I have not mentioned the absence of the sandal-thong between the toes of the one extant foot, a curious piece of carelessness hardly to be adequately explained by supposing it to have been originally supplied in paint ; nor the question of the colouring, or gilding, of the hair.

Pausanias needs a word : his passage (v.17.3) is our one authority for the statue ; can we lightly set it aside ? So far as the words are concerned (τέχνη δέ ἐστι Πραξιτέλους), there can be no doubt that they mean that the statue was an original by Praxiteles ; to that Pausanias's usual language bears witness. But whether he was mistaken is another matter : it is not the accuracy of his observation which is in question (in spite of some bad mistakes, especially concerning the pediments of the temple of Zeus, he is generally accurate⁶), it is the spirit which informed his observation. We may well enquire how far he was competent or anxious to judge the works of art which he saw and catalogued : and here I may quote a general criticism written some years ago :—

‘ Par lui-même [apart from earlier writers whose works he used], il n'avait ni le goût ni la méthode des vérifications minutieuses, des recherches patientes, des déchiffrements d'inscriptions. Il aimait le travail tout fait . . . Du reste, pas plus de sens artistique que de véritable science. Ses descriptions des chefs d'oeuvre de l'art sont sèches, terre à terre, dénuées de tout sentiment personnel . . . Il . . . apprécie peu, et presque jamais par lui-même. Il était de ceux qui visitent les choses célèbres, moins pour les voir, que pour dire qu'ils les ont vues. Il prenait des notes, mais il ne pensait pas ’.’

⁶ See Gardiner, *Olympia*, *passim*.

⁷ A. and M. Croiset : *Histoire de la littérature grecque*² (1901), v, 682 ff.

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Pausanias was doubtless shown the sights of Olympia by one of the official guides who catered for the tourist of the 2nd century A.D. ; he certainly collected some odd information at Olympia, especially about the temple pediments. He was not the man to question the description of the Hermes as the 'work of Praxiteles', which might have come from a desire to enhance local glory rather than to advance the cause of truth : and he did not think it necessary to add one word of description to his meagre mention of the statue.

If it is by Praxiteles, it was at any rate not one of his famous works ; the rest of ancient literature does not mention it, and we have (in my opinion) no certain derivatives from its type. The motive of the child carried on the left arm is a familiar one, of which Kephisodotos's Eirene and Ploutos is presumably the first example : we have coins of Roman Imperial date of Corinth⁸ and Lacedaemon⁹ on which Hermes is depicted with the infant Dionysos on his left arm, but he is not at rest, but moving, and he wears a chlamys. Pausanias (III. II. II) saw a statue of Hermes carrying Dionysos at Lacedaemon ; at Corinth he saw (II. 2. 8) two bronze statues of Hermes, of which the coin might represent one. At Pheneos, in Arcadia, on the other hand, we have the interesting 4th century (B.C.) coin of Hermes carrying the infant Arkas. He is again moving ; he wears a petasos on his head, and looks back at the child, who raises his right arm. On one example of the coin Hermes is naked, but has drapery thrown over his left arm ; in another he wears his chlamys, but so as to expose his body. Head¹⁰ dated this coin after c. 362 B.C. ; he described the artist as strongly influenced by the school of Praxiteles. This is only true in so far as the subject recalls the Olympia statue : Seltman¹¹ rightly refers the treatment rather to the school of Lysippos. Imhoof-Gardner¹² think that the Pheneos group was invented by the die-cutter, and is not a copy of any sculptural work. Be that as it may, it is worth remarking that we have only Pausanias's word that the child of the Olympia group is Dionysos. The subject was familiar ; Pausanias and his guide may have been equally mistaken, and it is conceivable that we should see

⁸ Imhoof-Gardner, *A Numismatic Commentary on Pausanias*, E. LXXXVIII.

⁹ *Ibid.*, N. V, N. VI, N. VII.

¹⁰ *Historia Numorum*², p. 452.

¹¹ *Greek Coins*, p. 166.

¹² *op. cit.* p. 97 ; PLATES, T. IV, T. V ; also illustrated by Seltman, *op. cit.* pl. XXXV, 12, and in *Guide to Principal Coins of the Greeks*, III. B.49.

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in the child not Dionysos, but Arkas or some other infant (the restoration of a bunch of grapes in Hermes's right hand, on the analogy of the Pompeian wall-painting of a satyr and child which recalls the pose of the Olympia group, has been shown¹³ to be based upon a false conception of mythology).

The controversy has served a good purpose : it has stressed the need for a re-examination of our critical apparatus. Professor Carpenter in his last paragraph says : ' Only in the little square room at Olympia can the case be argued out '. But the differences of opinion which have been exposed show that it is useless to enter that room for purposes of argument until a common basis of argument has been established upon several essential questions. Very many, probably most of the classical statues in museums outside Greece, have no known pedigree : their provenience is vague and unsatisfactory. The growing study of technique will cause many of them to be re-examined, and sometimes subjective verdicts will have to be reversed in this court of appeal. The Hermes at present awaits the verdict : the prosecution have not made good their case, but he cannot be said to have left the court without a stain upon his character. Even if we uphold his 4th century origin, we must explain the extraordinary circumstances in which the back of Hermes himself was so savagely re-handled, and the rest of the back of the group left in so variously unfinished a condition. Probably the best solution of the problem in this light is that proposed by Dr A. J. B. Wace at a meeting of the Hellenic Society on 10 November, 1931¹⁴ : he suggests that Praxiteles in fact began the practice of leaving clay models (of free-standing statues) to be reproduced in his studio by assistants ; that the supports of such works as his Satyr, the Aphrodite of Knidos and the Hermes were an integral part of the design, and that the Olympia group is the product of one of his pupils.

Some such explanation would fit the facts ; we could then regard the group as a work which was never, on account of mistakes, finished, and which exhibits the marks of the tiro as well as of the most advanced 4th century technique ; it would explain the ' correction ' of the back, the omission of the sandal-thong, the retention of the strut which is found objectionable. How and where it survived until its admission to the Heraeum must remain subjects for speculation : but when it was admitted it would have been upon the same terms as those upon

¹³ Robert, *Archaeologische Hermeneutik*, pp. 338 ff.

¹⁴ *Journal of Hellenic Studies*, 1932, LII, p. XXII.

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which a modern art gallery gladly accepts a work ascribed to the ' (School of) such and such a Master '.

One last word : it makes no difference to the argument whether we like or dislike the Hermes : yet those who maintain its originality are generally those who like it, and *vice versa*. The first class have more logic on their side : they say, in effect, ' We admire Praxitelean art : and we admire this statue which is in his style. It is so good that we think it must be by that great sculptor '. The second class might well say : ' We dislike Praxitelean art, and we dislike the Hermes : Praxiteles may well have made it '. But they prefer to say : ' We do not think so badly of him as that '. There is, however, a *via media*, by which the Hermes may be kept in the 4th century, and yet not serve to discredit Praxiteles more than he stands already discredited as the Forerunner of the Greek Decadence.

The Magic of Columba

by O. G. S. CRAWFORD

COLUMBA was the virtual founder of the Church of Scotland, and the life by his successor Adamnan has almost the authority of a contemporary document.¹ The author naturally extols the prowess of his hero ; and it is by no means easy to discern the real man through the hagiographical haze that now surrounds him. Opinions have differed widely, but all are agreed that he was quick-tempered. 'Primitive Irish ecclesiastics, and especially the superior class, commonly known as Saints, were very impatient of contradiction, and very resentful of injury. Excommunication, fasting against, and cursing,² were in frequent employment, and inanimate as well as animate objects are represented as the subject of their maledictions. St. Columba, who seems to have inherited the high bearing of his race, was not disposed to receive injuries, or even affronts, in silence. Adamnan relates (Lib. II, cap. 22) how he pursued a plunderer with curses, following the retiring boat into the sea until the water reached to his knees. We have an account (Lib. II, cap. 20) also of his cursing a miser who neglected to extend hospitality to him. On another occasion (Lib. II, cap. 24), in Hinba, he excommunicated some plunderers of the church ; and one of them afterwards perished in combat, being transfixd with a spear which was discharged in St. Columba's name. Possibly some current stories of the saint's imperious and vindictive temper may have suggested to Venerable Bede (*Hist. Eccl.*, Lib. III,

¹ Columba was born in 521 and died in 597 ; Adamnan probably wrote his *Life* between the years 692 and 697. The picture which he gives may therefore be taken to represent the monastery of Iona as it was in the 7th century.

² Cursing and fasting against. For the first, see L. Gougaud, *Christianity in Celtic Lands*, 1932, 53, note 4, quoting C. Plummer, *V.S.H.*, I, pp. CLXXIII-IV ; P. Power, *Early Christian Ireland* (Dublin, 1925) 100-1 ; Giraldus, *Itin. Kambriae* (ed. J. F. Dimock) I, 2 : II, 7 (pp. 27, 130) ; see also Baring Gould & Fisher, *Lives of the Saints*, I, 1907, 13ff. For fasting against, see L. Gougaud, *op. cit.* 97-8, and references given there ; and Baring Gould & Fisher, *op. cit.* 17ff.

Quintana: ad orientem et ad occidentem

neque ad certitudinem

Quoniam dñs iudex est

hunc humilia & hunc exalta

Quia Calix in manu dñi uini in eo plenus fuit et

À Inclinaire ex hoc in hoc

Utrum fexent non est exinanita

libertommes peccatorum ueniale

Ἐν ὧν ἀριθμῷ τὰ πάντα ἐκτίσθησαν:

¶ Omnia in ista peccata in confessione

Q. Exultabuntur Connuia iustici

450

Wotur Inuideuds

Infructu in agnitionem eius

Q. fac uir est induce locur etur

Et habitatio eius in finibus

Khionnegit pouenauum

Q. Curum & Gladium & bellum diab

In luminis admirabiliter demon ubi uel uisus

umbeskrift ommer Insignier overbe-

Permutauerunt somnum suum & nihil inuenerunt

inter una diuturnum moribus suis

epistolone unius iacob

A PAGE OF THE CATHACH, POSSIBLY IN THE HANDWRITING OF ST. COLUMBA
Ph. Royal Irish Academy

PLATE II



THE CATHACH: THE SHRINE IN WHICH ST. COLUMBA'S GOSPELS WERE KEPT
P^h, National Museum of Ireland

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cap. 4) the qualified approbation '*qualiscumque fuerit ipse, nos hoc de illo certum tenemus, quia reliquit successores magna continentia ac divino amore regularique institutione insignes*'.³ In view of these facts Dr Simpson⁴ is surely entitled to speak of 'the combination of ferocity and craft that formed a marked feature of his highly complex and tinted character'. Dr Duke, who protests strongly against this passage in particular, himself speaks⁵ of Columba's 'imperious and passionate nature'; and evidence of his craft abounds throughout the *Life*, especially in book II. We shall come across instances later.

The clue to Columba's life, and to much that is puzzling in early Celtic Christianity, is to be found in magic. 'The "sanctifying grace" of the legendary saint neither arose from habitual virtue nor resulted primarily in holiness; it was the Christianised counterpart of the magic potency of the druid'.⁶ 'With the acceptance of Christianity the saints simply occupied the shells left vacant by the druids who had disappeared'.⁷ This stands out plainly in certain passages where Columba and the heathen *magi* confront each other. In reading Adamnan's *Life* we receive the impression of two rival groups of sorcerers competing for recognition before the King of the Picts and his people. Thus on four separate occasions when Columba 'threw a miracle', the *magi* are mentioned as defeated rivals.⁸ He turns a bad spring into a good one, thereby disappointing the *magi* who hoped the water would infect him with disease. He holds up the attack of a monster in the river Ness, so that the heathen (*gentiles barbari*) are forced, by the greatness of the miracle, performed before their eyes, to magnify the god of the Christians. He brings back to life the dead son of a recent convert, thus confounding the taunts of the *magi*. He sails up wind on the stated day for his departure, and so publicly confutes Broichan, the chief *magus* of King Brude.

³ William Reeves (Editor), *Life of St. Columba*, written by Adamnan (1857), LXXVII.

⁴ *The Historical St. Columba*, 1927, p. 2.

⁵ Dr Duke's phraseology suggests that Dr Simpson has committed a sin or even (much worse) a breach of good manners and taste by adopting an unfavourable view of Columba's character! (As I have said already [ANTIQUITY VII, 453] I regard Dr Simpson's main thesis as by no means proven; but that is not the point).

⁶ J. F. Kenney, *Sources for the Early History of Ireland*, I, 303; quoted by Duke, 56, note 1.

⁷ *Lives of the British Saints*, by the Rev. S. Baring Gould and Canon T. Fisher, I, 1907, 10.

⁸ Reeves, II 9, 140-2, 145-6, 148-50.

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‘ The truth of the matter seems to have been ’, says Dr Duke,⁹ ‘ that St. Columba himself had not advanced very far out of the darkness which surrounded him, and that his own mind was shadowed by a very real belief in many of the superstitions of his age ’. Such an admission makes it unnecessary to do more than cite a few incidents by way of illustration.

Note, for example, Adamnan’s use of the words *benedictio*, *benedicare*. Columba found a white stone in the river Ness, blessed it and used it to cure his old rival Broichan, the witch-doctor of King Brude, from a severe illness ; having first secured from him by black-mail a promise which, before, Broichan had refused to give. The stone (perhaps pumice) had the quality of floating in water—*nec potuit sancti benedictio submergi*—nor could the saint’s *charm* be sunk. On four other occasions water imbued with Columba’s *benedictio* cures illness¹⁰ ; on another his *benedictio* is preferred to the gift of a sword.¹¹ That it was regarded as an asset of practical value is proved by the story of the blessed stake (*veru*) which successively impaled stags, and a dog, goat, salmon and crow.¹² We are told of bread, rock-salt, a chariot and a barn being blessed by Columba ; and the last act of his life was to bless the monks, with raised hand.¹³

The sign of the cross (*signum salutare*) had similar magic powers ; hence it was customary, before milking, to cross the pail, and before tools were used to cross them. It was considered effectual to banish demons, to restrain a river-monster, to prostrate a wild beast, and to unlock a door.¹⁴ Other instances of charms are cited by Reeves,¹⁵ who adds that a belief in them was not peculiar to Columba or his nation, but ‘ was professed in equal variety and firmness by the venerable father of *Saxon* history ’.¹⁶

Columba’s method of conversion was apparently to tackle the king first, then his *magi* and last of all his subjects. This is a legitimate inference both from Adamnan’s narrative and from the recorded acts of other missionaries, such as Augustine, Paulinus, Boniface.¹⁷ It

⁹ *The Columban Church*, 74.

¹¹ *Ibid.*, 159.

¹³ Reeves, 110, 114, 171, 230, 235.

¹⁵ Pp. 351–2.

¹⁰ Reeves, 111–3, 119, 127.

¹² *Ibid.*, 153–5.

¹⁴ *Ibid.*, 126, 127, 143, 141, 139, 151.

¹⁶ Bede, I, 1 ; III, 2 ; II, 12, 13, 17.

¹⁷ See *A Short History of Christianity*, by J. M. Robertson (Watts & Co., *Thinkers’ Library*, no. 24 ; 1931 ; 1s), 126–31. Note also the close proximity of early monastery and royal seat at Lindisfarne (Bamborough), Glasgow (Dumbarton), and perhaps also at St. Davids, Derry and Abernethy.

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was necessary to prove to the king that Christian magic was stronger than the magic of the local *magi*. Some of the means used have already been described. One argument which undoubtedly appealed strongly to these kinglets was a guarantee of success in battle. Magical means of securing victory were fasting, singing, and the use of relics. All three methods are well authenticated in early British and Irish history. At the battle of Chester (616), between Aethelfrith of Northumbria and the Britons, a band of Christian monks after a three days' fast chanted songs from a post of imagined security. That their action was regarded by the enemy as dangerous may be concluded from the fact that they were all deliberately killed. Bede¹⁸ records Aethelfrith as saying that 'if they cry to their God against us, they fight against us as surely as do those who bear weapons'.

We have no good evidence of Columba's direct *magical* intervention in any individual battle.¹⁹ Later tradition attributed to him the writing of the Psalter known as the Cathach,²⁰ which undoubtedly was carried into battle.²¹ (PLATES I, II). Similar magical powers are attributed by modern primitive peoples to the written word. Extracts from the Koran in the form of amulets are still used as charms to protect life, and in every modern war bibles carried by soldiers have been claimed to have saved lives. There can however be little doubt that his influence with the kinglets of the time rested on such a belief; indeed Adamnan says,²² that Columba by the power of his prayers (*virtute orationum*) secured victory for one side and defeat for the other. This power, he says, continued after death; he tells how Columba's battle-magic secured for Oswald of Northumbria the victory of Hefenfelth—a story he got from Failbhe who had it from Oswald himself.²³

¹⁸ Lib. II, cap. 2.

¹⁹ Compare, however, Adamnan, I, caps. 7, 8, 12.

²⁰ Still preserved in the National Museum, Dublin. The Cathach was the subject of a very elaborate paper by Messrs. H. C. Lawlor and E. C. R. Armstrong (*Proc. R. Irish Academy*, vol. XXXIII, sect. C, 1916-17, 241-443). The palaeographical part, which forms the most important section of this paper, leaves very little doubt about the genuineness of the tradition (which is at least as old as the 11th century) that the manuscript is as old as it has always been claimed to be. On the other hand it is impossible to state that it was either used or written by St. Columba himself. It may be said that the manuscript almost certainly belongs to St. Columba's time.

I wish to thank the authorities concerned, and Dr Mahr himself, for facilities in obtaining these two illustrations, and for permission to publish them.

²¹ Reeves, 250, quoting O'Donnell and the Four Masters, s.a. 555. If carried three times right-wise round an army by a pure cleric, a safe and victorious return was ensured.

²² Lib. I, cap. 1 (Reeves, 13).

²³ Reeves, 16.

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Thus fortified, after the battle Oswald sent to Iona for missionaries—hence Aidan and Lindisfarne and Northumbrian Christianity. The Hallelujah victory is another instance.²⁴

The practice of battle-magic was common throughout early times in Great Britain and Ireland, and deserves to be studied objectively. Here I can do no more than throw out a few suggestions. What evidence is there of pre-Christian battle-magic? It is unlikely that the practice was invented by the early Christian missionaries. What is its subsequent history? Does early Welsh and Irish literature throw any light upon the subject of origins? The later developments of this essentially magical practice may be studied today in any European country. Such a ceremony as that of blessing the colours is pure magic, and the colours themselves are directly descended from the earlier Christian charms. The association of the Christian church with the armed forces is itself to be traced back to magical origins. In the process of time, however, some specialization of function has taken place; and some of the offices performed, for instance, by the monks of Bangor have now devolved upon the regimental band.²⁵

²⁴ Bede, I, cap. 21.

²⁵ The following additional instances of battle magic may be cited:—The name of the tribal god of the Jews was Yahweh Sabaoth=Yahweh of the Armies or Lord God of Hosts (E. E. Kellat: *A short history of religions*, 1933, p. 46). St. Teilo prayed for victory in battle (*Lib. Land.*, ed. G. Evans, 1893, p. 123). A priest blessing a war-standard is figured in *Proc. Soc. Ant. Scot.* ser. 2, XXIV, 1912, plate opp. p. 168. Here a warrior in armour holds forth a lance for the archbishop to bless. It comes from a psalter of St. Jerome written for Ernulph, archbishop of Milan, A.D. 998–1018.

I am indebted to Professor William Rees for drawing my attention to the following passages in the *Black Book of St. Davids* (A.D. 1326):—

p. 36. The burgesses of the town of St. Davids in time of war were bound to follow the Lord Bishop with the shrine of the Blessed David and with the relics on either side (et cum reliquiis ex utraque parte).

p. 81. (A similar service was due from the copyholders of Trevine near St. Davids, within the lordship).

p. 89. The free-holders of Maboris 'ought to follow the Lord and his host in time of war, and ought to follow the relics of the blessed David to Carntrevy' (*i.e.* to the boundary of the lordship).

p. 95. Knights also of the lordship were liable for the same service.

p. 123. Tenants who hold by deed at Wolf's Castle in the bishop's land of St. Davids 'they ought to follow the shrine with the relics of the Blessed David in war-time and out of war-time as far as Carntrevy'.

p. 153. The burgesses of the town of Llawhaden (in the bishop's lordship of Llawhaden): 'and if the bishop in time of war shall make a progress through his bishopric with the relics of the Blessed David, they ought to follow him to the town of Carmarthen'.

THE MAGIC OF COLUMBA

In early Christian times, however, priests and monks took part in battles like everyone else. Columba himself is said to have taken part in three.²⁶ One of them was fought against Comgall (517-602), the founder and first abbot of Bangor, 'about a church', evidently some dispute about ecclesiastical jurisdiction. It took place at Coleraine in Ulster at some date after 563, which was the year of Columba's migration to Iona. Even purely ecclesiastical battles were not uncommon. In the year 763 a battle was fought at Argamoyne between the fraternities of Clonmacnois and Durrow, one of Columba's own foundations; the latter was defeated with the loss of 200 men. In 816 a battle was fought between the fraternities of Tigh Munna and Ferns, in which 400 were slain. The annalist adds the interesting fact that 'the fraternity of Colum-cille (Columba) went to Tara to curse (King) Aedh'.²⁷ The fact that in 804 'the monastic communities of Ireland were formally exempted from military service'²⁸ shows that the holy warriors of 816 must have been volunteers or enthusiasts. As Reeves pointed out however the custom was not peculiar to Ireland.²⁹

An unbiassed reader of Adamnan's Life will probably conclude that the religion there displayed was a form of magic differing in no essential feature from that of any other primitive people, ancient or modern. 'Conversion' was a mere transference of allegiance from one magic power (or group of powers) to another, believed to be more powerful. The religion of Columba had as little, or as much, in common with the religion of any Scottish minister of today as the barbarous life he led has with theirs. Both are negative reflections of the society of their day—no more.

How negative and unproductive that religion was we may see by comparing, for instance, the Scotland of Columba's time with the Scotland of the 16th or 17th centuries; and both with modern Scotland. A thousand years of Christianity did less to civilize the country than, for instance, a few decades of good communications by land and sea. But of course there were many other factors involved.

Columba's character was undoubtedly strong and influential; he

²⁶ *Liber Hymnorum*, quoted by Reeves, p. 252 (11th century MS., but 'the prefaces [where the battles are referred to] have historical value only as evidence of traditions. There is no proof of the authenticity of the hymns attributed to Columba'; A. O. Anderson, *Early Sources of Scottish History*, I, 1922, LXXII, LXXIII).

²⁷ Reeves, 255.

²⁸ *Ibid.*

²⁹ See Gregory of Tours, *Hist. Franc.* IV, 41; V, 17.

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may in addition have had personal charm. But his historical importance and that of his fellow-missionaries, though admittedly great, have been grossly exaggerated for purposes of religious controversy.

MIRACLES OF COLUMBA, with page-references to Reeves's *Adamnan* (edition of 1857)

- Water into wine, 103-5.
Sour apples into sweet, 105.
Corn planted after midsummer and reaped early in August, 106-7.
Broken bone mended by holy water (*benedictio*), 111-3.
Illness cured by a charm (*benedictio*), 113.
Rock-salt (*a sancto benedicta*) and beams unburnt, 114.
Book written by him unharmed by 20 days in river, 114-6.
Another similar miracle, 116-8.
Water from rock, 118.
Converts a bad spring into a good one, confuting the *magi*, 119.
Allays a storm when at sea, 119-20.
Another similar, through agency of Cainnich, 120-2.
Sends Cainnich his *baculus* miraculously across sea, 123.
Provides favourable winds on same day for two saints going in opposite directions, 124-5.
Asked to bless milk; accident, caused by demon lurking in empty pail, because boy did not make sign of cross; Columba blesses half empty pail, miraculously filled, 126.
Milk from an ox proved to be blood, the ox cured, 126-7.
Cures nose-bleed, 127-8.
Causes a large fish to be caught (two miracles, more or less similar), 128-30.
Blesses a poor man's heifers and foretells great increase, 130-1.
Another similar miracle, 131.
Blesses a barn, 230.
Curses a brigand and foretells his shipwreck (successfully), 132-4.³⁰
Foretells death of a wicked man before eating autumn pork, 134-5.
Tells at a distance of the death of one who tried to kill him, 135-7.
Foretells the immediate death of a murderer, 137-8.
Holds up the rush of a wild boar in a wood in Skye, 138-40.

³⁰ There is a strong suggestion that in this and the three ensuing miracles the wish was magical father of the thought, and had a causative influence on the result.

THE MAGIC OF COLUMBA

- Does the same of a beast in the river Ness, and thereby proves superior efficacy of the god of the Christians before *gentiles barbari*, 140-2.
Foretells future immunity of men and *pecora* from snake-bite, 142.
Blesses an iron tool (by request) so that it cannot harm men or *pecora*, 143.
Foretells that Diormit, when ill, shall survive him, 144.
Foretells that Finten, when ill, shall survive him, 144.
Brings back to life the dead son of a recent convert, to the confusion of the *magi*, 145-6.
Threatens Broichan (*magus* of Brude) with death, 146.
Finds a white stone in the Ness and endows it with magic healing properties, 146-7.
Cures Broichan with it (note use of term *benedictio* for the stone itself), 148.
Sails up wind and publicly confutes Broichan, 148-50.
Opens the *portus munitiois* of Brude with the sign of the cross, 150-2.
Opens a door in a monastery in Ireland, 152-3.
Blesses a stake for a poor man, which impales stags, a dog, a goat, a salmon and a crow, 153-5.
Foretells and possibly assists miraculously the return of a leather milk-pail by the sea, 155-6.
Foretells events and, through Libranus, controls wind for sailors, 156-63.
Makes up a matrimonial quarrel, 164-6.
Provides by prayer a favourable wind for Cormac's return, 170-1.
After death brings rain after a drought, 174-6.
After death affects the course of the wind (three separate occasions), 176-82.
Immunity of Picts and Scots from the plague attributed to Columba, 184.

Simonides, Aeschylus, and the Battle of Marathon

by J. L. MYRES

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IT is not often that lost works of two famous writers can be recovered simultaneously, and recognized without mention of the name of either on the monument they adorned. But in *Hesperia*, the Journal of the American School of Classical Studies at Athens (II. 4, 1933, p. 480 ff.), Dr James H. Oliver has made out a good case for the identification of epigrams composed by Simonides and by Aeschylus to commemorate those Athenians who fell at Marathon.

As long ago as 1855 the Greek scholar A. R. Rhangabé published¹ a fragmentary inscription found in a courtyard off Hadrian Street. There were four lines of verse, two at the top of the dressed front of the block, two engraved subsequently across the panel of pecked dressing, which had been smoothed away to receive them: the letters were however in the same style, though rather rougher, so the additional lines must have been cut very soon after the stone was erected. As the word 'Persians' occurred in the later inscription (and, as now seems possible, also in the earlier) the monument must have belonged to the period of the Persian Wars, and with this date the style of the letters agrees.

On 8 December 1932, another piece of the same monument was found in the American excavation of the Athenian Agora, built into a modern house. It contains the left hand edge of the block, and the beginnings of all four lines, but there are 15-20 letters missing between the two extant portions. Enough however is preserved to show that each line was an elegiac couplet, and that *both* elegies referred to an occasion when the valour of Athenian land-troops saved Athens and

¹ *Antiquités Helleniques*, II. Athens 1855.= *Inscr. Graecae*, I. 333.

SIMONIDES, AESCHYLUS, AND MARATHON

all Greece from Persian conquest.² This victory can only have been the Battle of Marathon : for Salamis and Mycale were sea-fights, and at Plataea Spartans and many other Greek contingents fought.

The opening words, referring to 'these men's valour', show that the block formed the base of a memorial stone, inscribed with the names of the fallen, like that of the men of the Erechtheid tribe in the miscellaneous fighting of 'the same year' 458 B.C.³ That it does not refer to 'these men' themselves, shows that it was a cenotaph, and confirms the attribution ; for the men who fell at Marathon were buried on the battlefield, under the mound you see there still.

Now the ancient *Life of Aeschylus* says there had been controversy over the reason why Aeschylus left Athens for Syracuse many years after. Was it because he was defeated by Sophocles in a dramatic competition, or because the epigram of Simonides was preferred to his for the Marathon monument? It is a silly bit of literary gossip. But was there a competition for this epitaph, and was it true, as the writer goes on to say, that the 'refinement of emotion' which elegy demands was 'alien' to the genius of Aeschylus?

No extant epigram attributed to Simonides can be recognized as written for the Marathon monument ; and for a very good reason. His works were not collected from the places where they stood till long after his time ; and the Marathon monument is not likely to have survived the Persian occupations of Athens in 480 and 479. If it had, we can hardly imagine that it would not have been treasured, and its inscription transcribed in due course. Pausanias, in Roman times, saw a list of the fallen on the Mound at Marathon, but if there had been an elegy of Simonides there, he would surely have quoted it.

That the two original lines on the monument in Athens were the work of Simonides is confirmed by the characteristic use of ἀρετή for individual excellence of character, which is attributed him in a well-known passage in Plato's *Protagoras* ; and also by the 'deep emotional

² Here is the full text, in the archaic Athenian spelling, but accented.

(1) ἀνδρῶν τῶνδ' ἀρετὴ [.] αἰεὶ [.] Περσὶν[?] [.]

(2) ἔσχον γὰρ περὶ τοῖς τε[ν βαρβαρόφονον αὐτῆ] ν : ἡλλά[δα μ]ε πάσαν δούλιον
ἐμαρ ἰδεῖν]

(3) ἐν ἄρα τοῖς ξαδαμ[δοι . . . μέγα κῆδος] λότ' αἰχμὲν στῆσαι πρόσθε πυλῶν
ἀν[.]

(4) ἀνχίαλοι πρῆσαι ρ[.] ἄστυ, βίαι Περσῶν κλινάμενοι[ι δύνανται]

³ *Corpus Inscriptionum Atticarum*, I 433. = *Inscr. Graecae*, I². 929.

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effect achieved without recourse to pretentious language ' which the critic Dionysius of Halicarnassus attributes to him.

But why was another epigram cut on the same stone, subsequently and at some cost to the neatness of the monument? There must have been some very cogent reason. And how did the story arise, that Aeschylus was defeated by Simonides in this competition, because his work was deficient in the 'refinement of emotion' that elegy required?

It does not need much acquaintance with the tragic diction of Aeschylus to recognize the reverberant phrases 'stabish their spear-head before the gates' and 'burn the brine-fringed city'⁴ or the unique and almost untranslatable word in the third line. Not much 'refinement of emotion' here: but enough of Aeschylus' own quality to force public recognition, or at least to make the judges, or friends of Simonides, insist that Athenians should have opportunity to decide for themselves.

⁴ αἰχμὴν στήσαν πρόσθε πυλῶν: ἀγχίαλον πρήσαι: ζαδαμ . . .

Aboriginal Rock-Carvings in Tasmania

by A. L. MESTON

WHEN Tasmania was first settled in 1803, the English found a primitive race with an early Palaeolithic civilization living there.

Within forty years these aborigines were practically exterminated, and a race, the study of which would have thrown much interesting light upon prehistoric man, was allowed to pass away with barely a comment, and with a singular lack of observation by the settlers.

There has always been considerable doubt whether this race expressed themselves pictorially before the advent of Europeans. Ling Roth, indeed, in *The Aborigines of Tasmania*, after citing most of the evidence that exists, goes so far as to say that the question of the existence of drawings before the coming of Europeans 'is practically an open one, for the evidence is not satisfactory'. But in the last three or four years the discovery of rock-carvings in two distinct and widely separated districts has produced evidence that is conclusive.

Where the river Mersey runs into Bass Strait, close to the town of Devonport, the western shore is prolonged into a rocky headland known as 'The Bluff', which, very low where it joins the mainland, extends seaward for 633 yards, and runs up to a height of 74 feet. This promontory is the site of a large number of aboriginal rock-carvings. The remains of a fairly extensive midden in the southwest corner, but beyond the precincts of the Bluff itself, give ample evidence of aboriginal occupation, and until quite recent years the place remained very much as it was when the aborigines frequented it. Sand dunes covered with boobyallas afforded shelter from all winds, and behind lay a little fresh-water lagoon fringed with tea trees (*melaleuca*). In front a bank of shingle, composed in the main of quartzite pebbles, provided material for their stone implements, and the nearby reefs furnished a liberal supply of shell fish. The abundance of food and water, and the warmth of the situation marked this as a favourite resort.

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With the exception of the steep northern face rising from the sea, the Bluff was originally covered with a forest of eucalypts and a moderate undergrowth, a small part of which still remains. Many of the carvings are incised upon the northern face where the rock masses have always been free from trees or shrubs ; others are on rocky outcrops in what was originally forest, and others are found in the forest that still remains.

The Bluff is composed of diabase, a hard igneous rock, and in this difficult material the carvings are made (PLATES I-II). All are cut on horizontal faces of rock and are distributed over the whole area of the promontory. There are 75 distinct carvings in all, but there is evidence from the remnants of many others that at one time the number was much greater. The condition of those extant varies greatly ; some are little more than mere lines, while others are deeply incised. Those on the seaward face of the headland are swept by spray every storm, and weathering is rapidly destroying them, for the surface of the diabase is everywhere flaking off, as some of the photographs clearly show. A remarkable feature of the carvings is the depth of some, the deepest reaching 58 millimetres, while ten others exceed 15 millimetres. This great depth, moreover, is combined with a comparatively narrow width, and is, in part, I have no doubt, due to weathering. In some the edges are sharp and the sides steep, in others the contours are rounded.

Although diabase is exceedingly hard, yet a soft crust is formed upon it by weathering, and this may be readily worked with crude stone implements, the only tools that the aborigines possessed. The depth of the carvings therefore would point to some of them being of considerable age, for it would seem that they were gradually deepened from generation to generation as weathering permitted. It does not seem possible that they could be otherwise incised. Although no carvings hitherto found in Australia are in diabase, but are cut in soft limestone, slate, or sandstone, it is interesting to recall that in the *Illustrated London News* of 6 April 1929 an illustrated account is given of an engraved diabase boulder of the Stone Age, recently discovered in the western Transvaal.

While it is impossible to say definitely what the carvings represent, some of them seem to aim at depicting natural objects, among which we may perhaps distinguish a fish, a snake, and the moon ; others are variants of the circle and the oval. And even these latter may be conventionalized drawings of objects well known to the aborigines. Occasionally the artist has made use of a natural unevenness in the rock to make his design stand out the more, but cracks in the rock have

ABORIGINAL ROCK-CARVINGS IN TASMANIA

not been used. In every design the natural cracks are transverse to the carvings, a feature well shown in the photographs. The size of the carvings varies greatly, as may be judged by the six-inch rule.

The other carvings are on the west coast, 90 miles as the crow flies from those at Devonport. Twelve miles south of Cape Grim there projects into the sea a massive trachy-dolerite headland, which although a little more than 500 feet high, is so prominent a feature of the landscape that it is called Mount Cameron West. Two miles north of this are two outcrops of friable calcareous sandstone 150 yards apart, small in area and of low elevation, on which the carvings are found. The rock is soft and easily worked, but hardens on contact with the air. In consequence of its friable nature many of the carvings are badly weathered, and all show marks of erosion.

Though the circle is a motif common to each group, there are marked differences. The Devonport carvings are in diabase, are cut on horizontal faces, and in the main exist as units; the Cameron West carvings are in friable calcareous sandstone, are cut without any respect to the surface plane, and are massed together, sometimes in rude geometric designs. Moreover at Cameron West are found features absent from the Devonport carvings, namely groups of three straight lines roughly parallel with one another, and rows of indentations.

At the southern sandstone outcrop the aborigines have not made use of the main mass, but of two detached blocks lying at its foot. Their position in relation to the main mass is clearly shown in the photographs (PLATE III). Here occurs the most striking design, which entirely covers a block 177.8 cms. long and 142.25 cms. wide (PLATE IV). Originally this was larger, for a considerable portion has broken away from the lower edge and lies in fragments at the foot. From this block we see the method employed in making the carvings. Indentations or punch marks are first made close together, apparently with a quartzite punch, driven by a stone used as a hammer; then a continuous line is made by connecting up the holes so formed. Several chisel-shaped pieces of quartzite lying around would be admirably suited for the purpose. The northern outcrop, higher and more conspicuous than the other, is just a mass of carvings. The cliff face and detached slabs, no matter at what angle they lie, provided there is a smooth surface, have provided a medium for the artist. In the main mass there is a shallow cavern, upon the roof of which, quite out of reach of one standing below, two circles have been carved. One mass, approximately twelve feet square tilted at an angle of about sixty degrees, is entirely covered

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with circles and concentric circles, some badly weathered, others in a good state of preservation.

This district, like the Bluff at Devonport, was a frequent haunt of the aborigines. The whole area, from the carvings to Mount Cameron West, is littered with shells, the remnants of their feasts, and with the cores and rejects from the manufacture of their stone implements. When the aborigines roamed along this shore it was a beautiful place. Sand dunes clothed with boobyallas and other indigenous shrubs extended along the whole area, while immediately behind them were park-like spaces, the pasture ground of mobs of kangaroos. Here was a place open to the sun and affording shelter from the bitter winds. The reefs nearby provided a bountiful supply of shell fish ; the lagoons behind the beach teemed with black swan and wild duck ; and the district abounded with wallaby, kangaroo, and opossum. Even today, although vast sand-blows begun by cattle breaking down the dunes and allowing the wind free play have destroyed the face of the country, in places for miles inland, the lagoons which remain still teem with wildfowl, and kangaroo, wallaby and opossum are plentiful in the neighbourhood. It is, perhaps, significant that several aboriginal skulls have been discovered here, and on my last visit I found the bones of a hand, the larger bones of the leg, and a mandible, objects which the aborigines carried with them as charms.

A careful search of over 250 miles of coast has failed to reveal carvings anywhere but in these two localities, and the question we naturally ask is why the Bluff near Devonport and the outcrop near Cameron West should have been selected.

So far as the Bluff is concerned a possible explanation is that its commanding position, its remarkable configuration and comparatively restricted area marked it out either as a sacred place or a place of assembly. Unfortunately we have but scant records of anything relating to the religious beliefs or tribal life of the aborigines. J. E. Calder, however, in *The Native Tribes of Tasmania*, describes such a meeting place and a ceremonial tree west of the Tamar only some 30 miles away. His words are apposite here. 'The stockkeepers found a kind of spire curiously ornamented with shells, grasswork, etc. The tree of which it is formed appeared to have much labour and ingenuity bestowed upon it, being by means of fire brought to a sharp point at top and pierced with holes in which pieces of wood are placed in such a manner as to afford an easy ascent to near the top where there is a commodious seat for a man. At a distance of 15 or 20 yards

ABORIGINAL ROCK-CARVINGS IN TASMANIA

round the tree are two circular ranges of good huts composed of bark and grass described as much in the form of an old-fashioned coal scuttle turned wrong side up 8 feet or 10 feet long. There are also numerous small places the form of birds' nests, made of grass, having constantly fourteen stones in each. The circular space between the spire and the huts has the appearance of being much frequented, being trod quite bare of grass, and seems to be used as a place of assembly and consultation'. For such a purpose the Bluff is admirably adapted, and, in the whole island, I know of no other place so suitable.

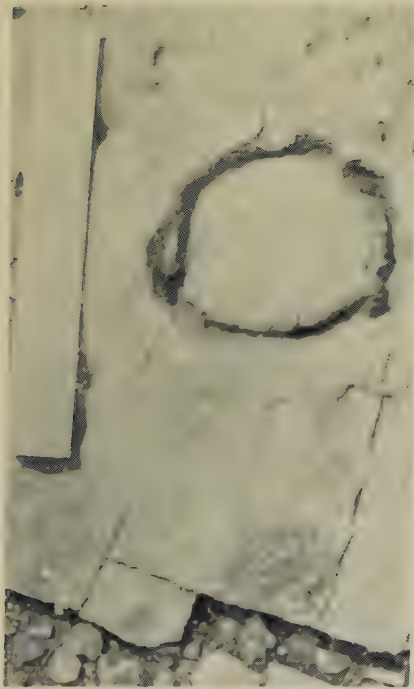
This, however, will not explain the position of the carvings near Mount Cameron West. The sandstone outcrops are quite insignificant, and in this respect are in marked contrast with the basalt headland to the south and some remarkable quartzite hills to the north; but there is this to be said, they constitute the only sandstone to be found in this part of the island. One feels that to a people in whose lives stones and rocks played so active a part such an occurrence would be significant. As in the opinion of many leading anthropologists the Tasmanian aborigines were of Melanesian origin, it is instructive to learn of the beliefs in Melanesia. Bishop Codrington, who spent 25 years there, writes of the superstitious regard for stones commonly shown by the Melanesians, and points out that 'stones as they naturally lie', because they strike the fancy as being out of the common, are frequently the object of veneration. If this were so in Tasmania, as it may well have been, it would account for the choice of this site.

And what, we ask, was the purpose of the carvings? Were they made at the whim of the artist to pass away an idle hour, was he seeking a means of self expression, or had they a greater significance? Art for art's sake, it seems to me, will not explain them. I see in them something strictly utilitarian, something arising out of a belief in magic. And here a recent writer, Dr J. R. Love, who has spent many years living in close contact with the Worrora tribe of northwest Australia, supplies us with important evidence. All the pictures made by the Worrora tribe except those of the human being represent some article of food, and even those of the human being 'the Wonjuna' are made to ensure that rain will not fail. 'The belief is,' he writes, 'that wherever the picture of an object of food is preserved in a picture cave, there that object will continue to flourish and increase. An object that recurs not infrequently, and that appears meaningless, till explained, is the liver of a stingray, a favourite article of food. When

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explained as the liver it is seen to be quite a fair picture of a liver. So also with some of the edible roots. But quite a number of the pictures are conventional representations of some article of food, or some part of the body, which do not to the European eye bear any resemblance to the object represented'. Bishop Codrington, also, supplies valuable data. 'The religion of the Melanesians consists, as far as belief goes, in the persuasion that there is a supernatural power about belonging to the region of the unseen; and as far as practice goes, in the use of means of getting this power turned to their own benefit. There is a belief in a force altogether distinct from physical power, which acts in all kinds of ways for good and evil and which is of the greatest advantage to possess or control. This is Mana. It may act through the medium of water, or a stone, or a bone. All Melanesian religion consists, in fact, in getting this Mana for one's benefit'. It seems probable that the Tasmanians possessed some such outlook, and art to them was a means of encountering and overcoming the Great Unknown.

PLATE I



ROCK CARVINGS AT THE BLUFF, DEVONPORT, NEW ZEALAND

PLATE II



ROCK CARVINGS AT THE BLUFF, DEVONPORT, NEW ZEALAND

The one on the left-hand is the deepest of all

PLATE III



ONE OF THE MOST STRIKING OF THE ROCK CARVINGS NEAR MOUNT CAMERON WEST, NEW ZEALAND

PLATE IV



OUTCROP SHOWING ROCK CARVINGS, MOUNT CAMERON WEST, NEW ZEALAND

The Fenland Frontier in Anglo-Saxon England

by H. C. DARBY

IT would seem that the Anglo-Saxon invasion of a great part of eastern Britain in the fifth century radiated fan-wise from the gateway of the Wash and of the Fenland Gulf. If this is true, it is not surprising. The position of the continental base of the Anglo-Saxons made the area a natural entry into the Midland plain; and the invaders, with the Wash behind them, gazed upon no unfamiliar scene. The region into which they came may not have been so different from their former homeland on the flats of northern Germany, the homeland which Bede¹ tells us they had so completely deserted. They penetrated by way of the Fenland rivers, up the Nene, the Welland, the Ouse, and the Witham, and this big spread was supplemented to the north and to the south by the smaller river entrances, the Bure, the Yare, the Waveney, the Humber and so on. The archaeological finds, as plotted by Mr Thurlow Leeds,² are located along the courses of navigable streams and their tributaries, and are disposed concentrically around the Fenland. Dr Cyril Fox³ has moreover indicated affinities, during the earlier Saxon period, between the opposite shores of this marshy gulf. All had changed, however, when the tribes emerged into the light of history. The Fenland basin, characterized at an earlier epoch by a certain cultural unity, had now become a frontier region, separating peoples and exercising a repelling action revealed in the making of the Anglo-Saxon States. Kingdoms, finding their limits here, partitioned the marshy wastes between them, and the barrier of the Fens became a permanent feature in the political geography of the Anglo-Saxon Heptarchy.

¹ Bede, *Ecclesiastical History*, bk I, chap. 15.

² *Archaeology of the Anglo-Saxon Settlement*, 1913, p. 18.

³ *Archaeology of the Cambridge Region*, 1923, p. 315.

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One hundred years (450-550) passed between the first coming of the Anglo-Saxons and the time when they had settled down with some semblance of permanency. During that century, three phases culminated in the changed status of the Fenland amid the events of the surrounding country : from the confusion of arrival there first emerged certain groups (possibly tribal) and these by association and amalgamation became the States of a later period. Whether they be history or legend or both, the accounts⁴ of the invasion are consistent in giving the impression of a settlement of small warring parties, separated from one another by woodland, fen, or heath. Under the stress of the increasing population, the calls of tribal kinship, the fortune of battle, and the growing importance of agriculture, these conditions gave way to increasing stability. At any rate people ceased to be separated in any military sense, and the settlements of, say, the Honingas and the Wramplingas in Norfolk no longer were at war with one another. The large entities formed by their coalescence, however, still had as their *marks* the more difficult obstacles, and still had as their enemies the folk who lived beyond those obstacles. We can form some idea of this tribal *mêlée* from the early document (7th century?) known as the 'Tribal Hidage'.⁵ Here is mention of the Wigesta, the Faerpinga, the Sweordora, the North Gyrwa and South Gyrwa, the Spalda, the Arosaetna, together with other units in the rest of England, and it was these tribes that, by a further process of coalescence, passed into still larger units to become the States of the Heptarchy. In East Anglia the very names Norfolk and Suffolk speak of two large groups, and there were similar divisions in Mercia and Northumbria.

Thus by an ever-widening circle of coalescence were East Anglia and Mercia formed ; Northumbria too. The story of the process indicates the way in which the Fenland became a barrier. The region might have afforded the invading tribes an entry, but in the political differentiation that followed, other possibilities emerged. From the veneer of folk-settlement, that extended in varying thickness from the Midlands to the East Anglian shore, portions coagulated into political entities ; the small marks of forest and heath were successively

⁴ Henry of Huntingdon, *Historia Anglorum* (ed. by Arnold), p. 48 ; Matthew Paris, *Chronica Maiora* (ed. by Luard), I, 237. See Kemble, *The Saxons in England* (1876) I, appendix A ; Ekwall, *English Place-names ending in Ing* (1923), p. 121 for a discussion of Kemble's theory.

⁵ *Cartularium Saxonicum*, ed. Birch, I, 414.



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obliterated, likewise the larger ones, until the Fenland remained as the great obstacle between the big states.

The Fenland in origin was essentially a flooded alluvial plain which had for its limits the harder rocks around, Chalk to the north and south, and, in the west, resistant Oolite grits. The surface of this plain was uneven and its higher portions projected to form the islands of the historical period. It emerged from the complicated events of the Ice Ages with its basin nature unchanged ; subsequent time saw its filling up by the various agents of sedimentation, until there remained a belt of silt bordering the shores of the Wash and an expanse of peat behind. Its rôle as a frontier involves three considerations—economic, military and psychological.

Economic activity, the utilization of the land, is the bond between the soil and the state. ' We see the state itself born as a rule out of the exploitation of the soil '.⁶ Whatever they had been on the continent, the occupations of the Anglo-Saxons when they settled in this island were in the main agricultural and pastoral ; the Saxon charters and documents give ample proof of this. For these pursuits, the potentialities of the soil upon which the invaders settled varied immensely. The land on either side of the Fenland had moderate possibilities ; but the Fen itself would seem to have been at this time without any agricultural significance. The work of the Fenland Research Committee is establishing the fact of the Roman granary of the Fenland. But in the eighth century it was essentially a ' wide wilderness ',⁷ a waste untilled, devoid of settled habitation.⁸ Whether the transformation was due to physical or to political causes, we cannot say. The Saxon remains of the Cambridge area in general indicate a choice of the most fertile land.⁹ It would appear as if this selective action operated on a large scale with political results. An index of the relative intensity of the settlement is furnished by the size of the Hundreds. Those of the Fenland are anything from two to four times as large as those of the surrounding upland. The following are typical :—

<i>Fenland</i>	<i>Upland</i>
Ely, 44,420 acres.	Humbleyard (Norf.), 23,000 acres.
Wisbech, 70,790 acres.	Whittlesford (Camb.), 10,928 acres.

⁶ Febvre, *Geographical Introduction to History* (1925), p. 87.

⁷ Felix, *Life of St. Guthlac*, ed. by Goodwin, p. 21.

⁸ *Codex Exonensis*, ed. by Thorpe, pp. 115, 120, 156, 158 ; ed. by Gollancz, pp. 117, 123, 159, 161.

⁹ Fox, *op. cit.*, p. 275.



The coastline at the present day is shown ; in all probability the Domesday coastline lay considerably behind this, the villages bordering the coast lay along the belt of silt that separated the peat fen from the sea. The only settlements within this peat region were upon the islands. Adjacent to the middle portion of the fen on the east, lay the Breckland which likewise had unoccupied tracts of country.

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The figures of the Tribal Hidage likewise indicate lightness of settlement, while the map of the Domesday villis, though compiled from material some centuries later in date, testifies to the same thing. The region became a perfect example of a 'natural frontier'. Its inhospitable nature provided the greatest of all barriers between societies, that of a human desolation, and this it was that constituted its real separating effect. In stating some principles of state formation, Vallaux¹⁰ has declared : ' Le sol est la base nécessaire à l'activité des groupes sociaux organisés en vue d'une action commune, que nous appelons états '. The Fenland lay on the confines of the available ' necessary bases '.

Barrier boundaries have their military aspect. A practically uninhabited area forms a scientific boundary because by holding neighbouring peoples apart it reduces that contact and friction which so often provoke hostilities. The Fenland in Saxon times constituted such a frontier, and the mutual protection it afforded to the States on either side was all the more important in an age when war constituted the normal form of inter-state relations. From the soldier's point of view, the barrier of the fens was nearly absolute. ' They were accessible ' wrote Matthew Paris¹¹ centuries later, ' neither for man nor beast, affording only deep mud '. No great body of men dared venture across the treacherous and trembling marsh. And a measure of the obstacle is to be found in the constant warfare that raged in the little gap between forest and marsh, which lay to the south of the Fenland. Here was the point of live contact between East Anglia and Mercia where the frontier sometimes narrowed to a single line—the Fleam Dyke built to make good a deficiency of nature. The successive reconstructions¹² of the dyke seen in section bear ample testimony to much fighting between the powers on either side. Abbo of Fleury in the tenth century declared of East Anglia ' On the south and east it is surrounded by the ocean; on the north by vast fens and swamps; on the west it is contiguous to the rest of the island, and therefore accessible; but to prevent frequent hostile incursions, it is fenced with a mound like a very high wall '.¹³ But he had in mind the Devil's Dyke to the east.

¹⁰ *Le Sol et l'Etat* (1911), p. 38.

¹¹ *Chronica Maiora*, anno. 1256.

¹² Fox, *op. cit.*, p. 294.

¹³ *Memorials of St. Edmund's Abbey*, ed. by Arnold, I, 1-6. See Camden, *Britannia* (1607) p. 360 :—' This (*i.e.* the wall) for many miles crosses that plain that goes by the name of Newmarket Heath, a place most liable to invasion beginning at Rech, beyond which the country is fenny and unpassable, and ending just by Cowlidge where the woods stop all marches '.

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These considerations were reinforced by psychological factors. Though marshland had been for generations the natural habitat of the Saxon, it never failed to inspire the Saxon heart with fear. In imagination he peopled the marsh with demons and dragons, ready to do great harm to man, and his fears are revealed in the early literature of the German marshes. Nor did the invaders leave this terror behind them. Late in the Saxon period¹⁴ an eighth-century monk tells how :

There is in Britain a fen of immense size, which begins from the river Granta (*Grante*) not far from the city, which is named Grantchester (*Granteceaster*). There are immense marshes, now a black pool of water, now foul running streams, and also many islands, and reeds, and hillocks, and thickets, and with manifold windings wide and long it continues up to the north sea . . . Guthlac . . . inquired of the inhabitants of the land where he might find himself a dwelling place in the wilderness. Whereupon they told him many things about the vastness of the wilderness. There was a man named Tatwine, who said that he knew an island especially obscure, which oft-times many men had attempted to inhabit, but no man could do it on account of manifold horrors and fears, and the loneliness of the wide wilderness.

Conditions were similar in the northern fens. When St. Botolph came to Ikanhoe near Boston, he likewise found the place infested with devils of various kinds.¹⁵ The incredible nature of these tales is irrelevant to the argument ; the spirit which created them is an indisputable fact. They show something of what the barrier of the fens meant in the lives of the people of this age. Only familiarity with the region in its most sombre aspects can do justice to these fears of the early Saxons. Many centuries did not assuage their terror ; and at last the horror of the fen passed into tradition—so deeply was it grounded in the Saxon mind. Nor were all the horrors imaginary. They had indeed a very substantial foundation ; for the Fenland was a pestilential place ‘ oft-times clouded with moist and dark vapours ’.¹⁶ Many are the references to the unhealthy nature of the region.¹⁷ Ague and malaria with their hallucinations made the life of the fen-man very miserable ; and it is

¹⁴ Felix, *Guthlac*, (Goodwin), p. 21. Grantchester refers not to the village of that name but to Cambridge. The Latin version has ‘ haut procul a castella quod dicunt gronta ’ with variants of *gronta*, *bricc* added over line ; and *nomine gronte*. See *Memorials of St. Guthlac*, in Latin, edited by W. de Gray Birch, p. 17.

¹⁵ *Acta Sanctorum ordinis S. Benedicti*, ed. by Achery and Mabillon, III, 5.

¹⁶ Felix, *Guthlac*, ed. by Birch, p. 17. Compare Beowulf’s account of the Frisian shore : ‘ This is no pleasant spot. Thence ariseth aloft the vaprous blend ; and dark, to the clouds ’.

¹⁷ *Codex Exon.*, pp. 120 and 123 of Thorpe’s edition. But see Gollancz, pp. 123 and 125. See also *Acta Sanct.*, p. 6.

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little wonder that St. Guthlac 'was greatly troubled within him about the undertaking he had begun, namely to dwell there alone in the wilderness'.¹⁸

Economic, military and psychological influences produced their results. The Fenland, spurned and held in a fearful contempt, decreed to be a wilderness, became a frontier zone. But the very reasons for which men in most cases avoided the marsh as a place in which to settle, attracted other people who, willingly or otherwise, shunned the settled areas around. Denominated as unfit for occupation by most people, the region gathered to itself a population all its own. Forming the periphery of two not too firmly welded States, its inevitable destiny was to become a refuge for the lawless; and the many fen islands provided haunts for the exiles that came thither:

Wide is this waste
Its exiled seats are many,
Hidden homes
Of miserable sprites;
They are the faithless ones
Who these cots inhabit.¹⁹

But, bad as it was, to them the waste was home, a base for further depredation,

When they from wanderings
Weary came,
Rested a space of time,
In repose rejoiced,²⁰

and then set out again, roving about in bands under leaders.²¹ Some of these brigands may have been remnants of the autochthonous population, and indeed it would seem that of all portions of the English plain, the Fenland was the best suited to become a refuge for the fugitive Britons. Many indeed have declared this to have been the case. Bentham,²² for example, says that 'the Isle of Ely was possessed by the old Britons long after the Saxons had taken hold of England', and a variety of evidence has been adduced to support his view.

¹⁸ Felix, *Guthlac* (Goodwin), p. 29.

¹⁹ *Codex Exon.*, p. 120 (Thorpe); and Gollancz, p. 123.

²⁰ *Ibid.*, p. 115 (Thorpe); and Gollancz, p. 117.

²¹ *Ibid.*, pp. 118, 156-7 (Thorpe); and Gollancz, pp. 121, 159.

²² *Cathedral Church of Ely*, app. I, 51. See Stukeley, *Itinerarium Curiosum*, p. 56: 'Tis probable that our fens and morasses might be a long security to us against the Saxons'; Freeman, *Norman Conquest* (1876), IV, 470; and Conybeare, *History of Cambridge* (1897), p. 427, etc.

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Beddoe,²³ on the basis of anthropological observation, concluded that 'there is some ground for suspecting that a Welsh or aboriginal population lingered longer in the Fens than in the east of England generally.' Haddon²⁴ too, was also struck by the proportionately large numbers of short dark-haired, dark-eyed persons in the locality'. Any observations that might be made however are complicated by great difficulties, for the Fenland is a region into which people have continually migrated—Englishmen of many periods and places, Dutchmen with Vermuyden, Scotchmen after the battle of Dunbar, and those French Huguenots described by Kingsley²⁵ as 'dark-haired, fiery, earnest folk, whose names and physiognomies are said still to remain about Wisbeach, Whittlesey and Thorney'. To demonstrate the rôle of a refuge land which the marsh might have played, it is not sufficient to indicate a Celtic element among its people; it must be shown that here Britons were more numerous than anywhere else in the English plain. It is difficult to do this, and apart from the general uncertainty of the evidence, it is most unlikely that the marsh provided a unique region of refuge amid the confusion of the Saxon arrival; it was too much in the main advance of the invasions.

At a later date however, when the states of East Anglia and Mercia had emerged, some communities of outlaws found homes in the frontier borderland of the Fenland; and among these there were not a few Welshmen. Guthlac of Crowland in the early eighth century 'dwelt lonely in that borderland, where he was a pattern unto many a Briton';²⁶ and there he found that these Britons, 'the deadly foes of the Saxon race, were disturbing the English people by their raids and widespread devastations'. On one occasion, in the days of Coenred, king of the Mercians, he

stood listening intently and caught words of the common people, and saw some bands of Britons approaching his dwelling. For in the course of his former life he had been in exile among the Britons so long that he was able to understand their strident speech. He hastened over the marshes towards his abode and almost at the same instant saw all his house enveloped in flames, and the Britons, intercepting his approach, began to poise in the air their sharp-pointed darts.²⁷

²³ *Memoirs Anthropological Society* (1869), pp. 458–9.

²⁴ *Study of Man* (1895), p. 45.

²⁵ 'The Fens', in *Prose Idylls* (1873), p. 119.

²⁶ *Poems of Cynewulf*, ed. by Kennedy, p. 268.

²⁷ Felix, *Guthlac* (Birch), p. 29; The British are 'brettonica' and 'brittannica'. See also Goodwin's edition, p. 43. And also A. Gray, *On the Late Survival of a Celtic Population in East Anglia*, *Proc. Camb. Antiq. Soc.* 1911, p. 42.

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When the powers on either side were weak, the Welsh raids extended over the borders of the Fenland on to the villages of the upland around ; and in the treaty²⁸ which Aethelred made with the Danes, in 991, each party undertook not to aid the Welshmen. Even as late as the eleventh century these Britons were ' ravaging far and wide in the province of Huntingdon ' .²⁹

It was inevitable that the states around the Fenland should interfere in the lawless region that separated them, if only for their own protection. These states were three in number, and their disposition in relation to the fens resulted in two groups of frontier oscillations :

(1) East-west between East Anglia and Mercia.

(2) North-south between Mercia and Northumbria.

These may be considered separately.

The balance of forces between East Anglia and Mercia attained an equilibrium which, though unstable, did represent a real compromise of power. At any rate it had elements of permanence, for the Southern Fens were normally partitioned into two spheres. Their more southerly portions, including Ely, were part of East Anglia ; while the district to the north of this, that is, the region about Crowland, Thorney and Whittlesmere, were part of Mid-Anglia or Mercia. The division was not without fluctuation. The fragmentary nature of contemporary records however does not permit a complete reconstruction of the oscillation, but enough remains to show the boundary in operation.

The first of the two States to emerge from the earlier confusion was East Anglia, founded in the first half of the sixth century.³⁰ In this early maturity the concentrating effects of definite boundaries are to be discerned. While Mercia existed only as the fragments of the Tribal Hidage, East Anglia had become a compact state ; a cohesion which seems to have had an earlier parallel in the identity of the Iceni who occupied the region centuries before.

The East Anglian state rose to prominence after 616, and the missionary activities of the East Anglians³¹ indicate that, during the early part of the seventh century, the Southern Fens were under their control. While they were building a church at Ely, the Mercians in

²⁸ *Cartularium Saxonicum*, 991.

²⁹ *Chronicon Abbatiae Ramesiensis*, ed. by Macray, p. LXXVII.

³⁰ Chadwick, *Origin of the English Nation* (1905), p. 172.

³¹ See *Anglia Sacra*, ed. by Wharton, I, 594 and 403.

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the west were consolidating. This growing entity absorbed the numerous tribes and units that passed under the name 'Middle Angles',³² until ultimately the heathen Mercian state reached the edge of the fen, and East Anglia was called upon to defend its sphere of lordship. Penda of Mercia savagely raided the borderland;³³ the peaceful activities of the East Anglian bishop in Ely were disturbed; and the island 'changed entirely into a solitary place', devoid of Christian churches. But the Mercian interlude was soon over;³⁴ East Anglia recovered its control of the Fenland; and towards the middle of the century (660) there is the terse statement of Bede: 'Ely is in the province of the East Angles, a country of about six hundred families, in the nature of an island, enclosed, as has been said before, either with marshes or with waters'.³⁵ There is no evidence to indicate the limit of East Anglian power; that it reached as far north as Boston is certain.³⁶

Bede³⁷ writing a little later declares that Peterborough was 'in the country of the Girvii'. 'The Girvii', wrote the Ely Chronicler³⁸ 'are all the southern Angles that inhabit the great marsh in which the island of Ely is situated'. Here, it must be admitted that he wrote a long time after the event. The trustworthiness of his statement is difficult to assess. At any rate the Girvii form one of the units mentioned in the Tribal Hidage. The fen included other of these units; in addition to the North and South Gyrwa, there were the Spalda and possibly the Sweordora and the Wigesta. The extent and relative position of these peoples are not all clear,³⁹ but at any rate there is sufficient testimony to show that their status, in relation to the kingdoms on either side, was a peculiar one. In the Tribal Hidage, East Anglia and the Gyrwa are entered as separate items. Other sources show the South Gyrwa under

³² Bede, I, 15; III, 21. *Saxon Chronicle*, 655 and 657.

³³ *Liber Eliensis*, ed. by Stewart, pp. 5, 23, 48; Bede, III, 18. *Saxon Chronicle*, 654; *Anglia Sacra*, I, 594.

³⁴ Penda was killed in 655. *Saxon Chronicle*, 655; Bede, III, 24.

³⁵ Bede, IV, 19.

³⁶ *Acta Sancta.*, *op. cit.*, III, 5. The *Saxon Chronicle* for 657 declares that Mercia included Peterborough and 'these meres and lakes, Shelfermere, Whittleseymere and all the others which lie thereabouts'. But some of the passages in this entry are clearly of a late date.

³⁷ IV, 6.

³⁸ *Liber Eliensis*, p. 4.

³⁹ See Note at end.

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their own chieftain,⁴⁰ who had the power of disposing of his domains as he wished,⁴¹ and this political identity was paralleled by an ecclesiastical one. The Isle of Ely was likewise peculiar ; it was part of East Anglia, yet somehow distinct from it. Bede's phrase runs 'in regione quae vocatur Elge',—translated into Saxon as 'in þæm þeodlande þe is geceged Elige',—in the tribeland that is called Ely. In the diocesan organization of a later date, Ely was not included in East Anglia, yet its clergy normally made their profession to an East Anglian bishop.⁴² Similarly in the latter half of the seventh century there is every indication that it was under an administration separate from that of East Anglia. It would seem that Ely, in the idiom of a later age, was then a border territory subject to and defended by one party, though exposed to the ravages of another ; and as a border march of East Anglia it possessed a large amount of independence.

Nor was the situation without other features of frontier diplomacy. The Gyrwan prince, Tonbert, sought the hand of the daughter of the East Anglian king. Etheldreda was however much opposed to the proposal. But 'vincit parentum auctoritas' and, to appease the border chieftain, the alliance was concluded.⁴³ There is even rumour that the island itself was the dowry that accrued to Etheldreda, to say nothing of the East Anglians. We have only Thomas of Ely's word for this ; and though it may not be exact, the circumstances before and after⁴⁴ favour the idea that the marriage was a political necessity to East Anglia, a stroke of policy by which its western frontier was strengthened. When Tonbert died, Etheldreda began in 673 to build a monastery in Ely and to restore the old church⁴⁵ ; and in 695, when the Ely folk desired stone, they 'went on board ship, because the country of Ely is on every side encompassed with the sea or marshes, and has no large stones, and came to a small abandoned city, not far from thence, which in the language of the English, is called *Grantecester*'⁴⁶ ; it lay on the Mercian shore and was probably a relic of border warfare.

The eighth century was, as far as we know, a century of peace.

⁴⁰ Bede, IV, 19.

⁴¹ *Liber Eliensis*, p. 18.

⁴² Venables and Wood, *Diocese of Ely. Procs. Camb. Antiq. Soc.* 1891, p. 164.

⁴³ *Liber Eliensis*, p. 18.

⁴⁴ *Ibid.*, p. 31 *et seq.*

⁴⁵ *Ibid.*, p. 48. *Saxon Chronicle*, 673.

⁴⁶ *Liber Eliensis*, p. 64. See Bede, IV, 19, whose spelling is *Grantacaestir*.

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Of the petty wars and raids that went on, there is no record ; the reconstructions of the Fleam Dyke bear a silent testimony.⁴⁷ The only definite evidence shows the fens internally to be an unruly and lawless region, but little known in parts, and the resort of bandits and robbers. In the south, on the island of Ely, East Anglian influence continued undisturbed ; while to the north lay the Mercian sphere. Crowland 'on middan Gyrwan fenne'⁴⁸ was in the land of the 'Mediterranei Angli',⁴⁹ which was of Mercia. The century of peace, if indeed peace it was, was doomed to end in war. From 792⁵⁰ onward, the Mercian power was dominant ; until in 823⁵¹ the East Anglians sought the protection of Wessex and the day of Mercia was over.

Henceforth the kingdom of East Anglia began to be a part of the larger kingdom of England. The old ties of its people were replaced by wider allegiances. Yet still it retained a certain measure of its old life. Its last king was murdered by the Danes ; but though without a king, the region still had a separate witan, and seems to have been treated as one unit under a local earldorman.⁵² It emerged from the Norman confusion as one—the earldom of Norfolk and Suffolk.

The physical circumstances of the northern fens differed considerably from those of the south. Ely and the other isles were replaced by a monotonous expanse relieved only by the elevations of Sibsey and Stickney. Despite this lack of islands, however, the area was not devoid of opportunities for settlement ; here the marsh was of silt and not of peat. But north of the Fenland proper there exists a region which functioned as an island during the Saxon period. This was 'Lindsey', the 'eye' or island of the Lindisse, and it played a part between Northumbria and Mercia similar to the rôle of Ely in the south. The same two features emerged : continual fluctuation between the neighbouring powers on the one hand, and on the other hand the maintenance of a certain amount of unity and autonomy.

During the Saxon period Lindsey was physiographically all but an island. To the east was the sea ; to the north lay the Humber

⁴⁷ Fox, p. 294.

⁴⁸ *Hyde Register*, ed. by Birch, 88.

⁴⁹ Felix, *Guthlac* (Birch), p. 17.

⁵⁰ *Saxon Chronicle*, 792.

⁵¹ *Ibid.*, 823.

⁵² *Saxon Chronicle*, 1004.

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marshes where the waters of the Don, the Ouse and the Aire mingled in a waste of fen. On the south, fenland continued on either side of the Witham right up to Lincoln. To the west there were the marshes of Ancholme and Axholme. The position of the Isle of Axholme made it more easily accessible from Lindsey than from the north, and its inclusion within the shire of Lincoln, necessitating a curve in the county boundary, is the expression of this fact. Along the west only, for a short stretch of eleven miles, was Lindsey attached to the mainland. But even this isthmus was a land of sand and heath and it remained unreclaimed until late in the eighteenth century. The main geographical fact about Lindsey was its isolation.

Only recently was it realized that Lindsey, consistent with this isolation, emerged from the confusion of the Saxon invasions with its own line of kings. Professor Stenton,⁵³ after correlating various evidence, declares the fact as certain. There is evidence too of a certain amount of intercourse between the Britons of Lindsey and their conquerors, and also of a marked Celtic element among the personal names of the royal house. There may therefore be genuine historical significance in many references contained in the 'Lay of Havelok'. The gleeman's lay is recorded by Skeat⁵⁴ as 'the general result of various narratives connected with the history of Northumbria and Lindsey at the close or possibly the beginning of the sixth century', and in it a British people and a British king appear at Lincoln amid Teutonic surroundings. There is further sufficient evidence to indicate that the identity of the ancient kingdom survived the extinction of its dynasty, and that it was recognized as such by the Danish invaders of the ninth century. Moreover 'the fiscal evidence supplied by Domesday Book and later records suggests very strongly that Lindsey was regarded as distinct from Kesteven and Holland long before the Norman Conquest'.⁵⁵

In the Tribal Hidage, Lindsey is noted as containing 'with Haethfeld land' some seven thousand hides, that is, equal to the East Saxon and South Saxon kingdoms. It played a secluded part in the general history of the Heptarchy, but its position made it a regular prize of war between Northumbria and Mercia. The material available does not permit a complete account of the frontier oscillations, but the

⁵³ F. M. Stenton, in the volume of Essays presented to R. L. Poole, 1927.

⁵⁴ Skeat, *Lay of Havelok*, p. xxxiv.

⁵⁵ Stenton, *op. cit.*, p. 147 note.

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evidence relating to the seventh century is sufficient to enable a consistent picture to be built up.

At the beginning of the century, Lindsey was included within the limits of the northern kingdom,⁵⁶ but in 633,⁵⁷ the region was lost to the Mercians. It was recovered for a time⁵⁸ only to be lost again in 642;⁵⁹ recovered in 655⁶⁰ to be lost in 658.⁶¹ Then the Mercian king, Wulphere, founded 'a monastery at the place called Ad Barue in the province of Lindsey', which was under the control of the Mercian bishop at Lichfield. 'Sexwulf was bishop as well of that province as of the Mercians and Midland Angles'. It was recovered for a third time by the Northumbrians, and the Mercian bishop was replaced by another;⁶² prematurely, however, for the region was lost again in 679.⁶³ The century of warfare closed in peace; and it is likely that the island became a semi-independent appanage of Mercia.⁶⁴ The outstanding problem in this fluctuation is the manner in which the people of Lindsey accepted incorporation within a large unit. The phrase 'conquest of Lindsey' has been used too lightly and without appreciation of the existence of a local dynasty, for there are some indications symptomatic of local vitality.⁶⁵ Whatever the solution may be, it does not seem to disagree with the idea that Lindsey, like Ely surrounded by marsh, became a barrier state between two more powerful kingdoms.

Speaking of the frontier in early history, Lord Curzon⁶⁶ declared that 'sometimes it was a razed or depopulated or devastated tract of country; at others a debatable strip between the territories of rival powers; or, again, a border territory subject to and defended by one party though exposed to the ravages of the other'. The Fenland constituted such a frontier amid the political geography of the Saxon period.

⁵⁶ *Saxon Chronicle*, 617, 627. Bede, II, 16.

⁵⁷ *Saxon Chronicle*, 633. Bede, III, 1.

⁵⁸ Bede, III, 11.

⁵⁹ Bede, III, 9. *Saxon Chronicle*, 642.

⁶⁰ *Saxon Chronicle*, 655.

⁶¹ Bede, III, 24; IV, 3.

⁶² Bede, IV, 12. *Saxon Chronicle*, 678.

⁶³ Bede, IV, 21. *Saxon Chronicle*, 679.

⁶⁴ *Saxon Chronicle*, 702.

⁶⁵ Bede, III, 11.

⁶⁶ Romanes Lecture on 'Frontiers', 1907, p. 26.

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NOTE ON THE GYRWE

The Gyrwe¹ are one of the units enumerated in the Tribal Hidage. They were divided into North Gyrwe and South Gyrwe, each containing 600 hides. Bede² says that Peterborough was in their country, while in the Hyde Register³ it is stated that Crowland lay 'on middan Gyrwan Fenne'. The evidence available concerning the extent of this Gyrwan territory however is not conclusive and permits different views being held.

The links in the first identification⁴ are as follows:—

- (a) Bede⁵ says that Etheldreda daughter of the East Anglian king Anna married Tonbert a prince of the South Gyrwe.
- (b) Thomas of Ely⁶ declares that she received the island of Ely as a dowry from her husband.

There is a *prima facie* case to equate the dowry with the domain of the Gyrwe because,

- (1) Bede⁷ says Ely contained 600 families.
- (2) Thomas of Ely⁸ in another connexion declares,
Girvii sunt omnes australes Angli in magna
palude habitantes in qua est Insula de Ely.

But Bede himself does not suggest that Etheldreda acquired the island in this way.⁹ On the contrary he states 'Est autem Elge in provincia Orientalium Anglorum', and adds that she built her monastery there because she was descended from that same province of the East Angles. It must be remembered that Thomas of Ely was much later in time than Bede and like many another medieval chronicler not so reliable.

There is a second identification dependent upon a different type of evidence. Goodall¹⁰ points out that the S. Girvii 'could not have occupied the southern bank of the Nene near Peterborough for Sweordora (another Hidage unit) stood there. We must of necessity place them between the Nene and the Welland, and we must place the northern Girvii north of the Welland. Their area was not greater than one-sixth of the average county'. In a like manner Goodall identifies Spalding¹¹ as the area occupied by the Spalda and Wisbech as the region of the Wigesta.

¹ Ekwall on the Gyrwe in *Beiblatt zur Anglia*, 1922, p. 116.

² IV, 6. In a charter dated 957 (Birch, *Cart. Sax.* 1003) the phrase 'on gyruþan fen' occurs in an enumeration of the bounds of Conington.

³ Register of Hyde Abbey, (ed. by Birch), p. 88.

⁴ as held e.g.: by Corbett. *Eng. Hist. Rev.*, 1900.

⁵ IV, 19.

⁶ *Liber Eliensis*, p. 18. 'Insulam Elge ab eodem sponso ejus accepit in dotem'. Page 46, 'Ely, quam in possessionem propriam, quam a Tonberto primo sponso ejus, jure dotis'. For the Saxon custom of the husband giving a dowry, see Tacitus: *Germania*, 18. 'Dotem non uxor marito, sed uxoris maritus offert'.

⁷ IV, 19.

⁸ *Liber Eliensis*, p. 4.

⁹ See Chadwick, *op. cit.*, p. 7-8.

¹⁰ Goodall: 'The Tribal Hidage' in *Zeitschrift für Ortsnamenforschung*, Band 1, Heft. 3 (1925), p. 170. Cf. Mawer and Stenton: *Place Names of Bedfordshire and Huntingdonshire*, for Sword Point, 1926, p. 208.

¹¹ Goodall, 169-170.

FENLAND FRONTIER IN ANGLO-SAXON ENGLAND

There are other suggestions¹² but these two are the main points of view. To assess their relative merit, the testimony of Thomas of Ely's narrative must be balanced against the reliability of place-name identification. It is difficult to come to a conclusion; in fact it is not necessary to do so. There are many possible explanations. The term 'Gyrwe' which means 'fen dwellers' may at times have been applied to a particular tribe, at other times to all the marsh-dwellers in general. The fact that the Sweordora lived towards Peterborough is no reason why the Gyrwe should not have on occasions extended their influence over portions of the Fenland not originally their own. And it is possible that Etheldreda may have been presented with Ely by her own family just as in a later period the Mercian Queen Aethelswith possessed lands in Wessex. When everything is considered, it would indeed be peculiar if a complete solution were to be found, for in addition to the general difficulties of historical record are added the special difficulties of the region. The confusion in the evidence but confirms the supposition that in this frontier region, known to be generally unstable and wild, political limits changed many more times than the written record warrants.

¹² e.g. Brownbill: 'The Tribal Hidage', in *Eng. Hist. Rev.*, Oct. 1912.

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COLUDES BURH (PLATES I-II)

Coludes burh was the name of a cliff-castle or promontory fort on St. Abb's Head, Berwickshire, on the coast about midway between Berwick-on-Tweed and Dunbar. The position is a magnificent one, commanding a view from the coast of Fife and Forfar in the North to Lindisfarne in the South (from the hill above). The coast here is indented with many small inlets ; and it is across a neck between two such, at a distance of a quarter of a mile west by north of the lighthouse, that the line of the early rampart was drawn. This consisted of a thick wall built of rough stones *cemented together with hard mortar*—a feature unique in my experience. Three massive blocks of masonry still survive, one still in its original position above the foss (see PLATE I), the others, smaller, somewhat displaced. The mortar is made of lime and shingle, the latter doubtless obtained from one of the sea-beaches 250 feet below. With the exception of this neck every other side of the area cut off is precipitous and quite unscalable (see FRONTISPIECE, opp. p. 129). Within the area are remains of at least two buildings, one of them rectangular and about 9 by 25 paces ; and there seems to be the site of a third just outside the foss at its east end. The state of the ground outside in the immediate vicinity suggests that it was formerly cultivated in patches. The scenery is magnificent, and the sea-birds, sea pinks and close-bit turf add to the charm of the spot.

Of its history we know only that there was a double (*i.e.* co-ed.) monastery here found by Æbba, the half-sister of Oswiu, king of Northumbria (642-71) ; and that it was subsequently burnt down. The date of its destruction is given in one manuscript of the O.E. Chronicle as 679, but this is regarded by Plummer as too early.

The foundation of monasteries in abandoned forts has many parallels, at Ebchester (by the same Æbba), Burgh Castle, Suffolk (by Fursey) and at Reculver (by Bassa). In those days there was need of protection, nor was the distinction between civil and religious establishments as marked as it became later.

But the most interesting fact (after the mortared wall) is undoubtedly its mention, under the name *Caer Golud*, in a poem in the Book of Taliessin. This has hitherto escaped notice. I am assured

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by Professor Watson that the equation of *Caer Golud* and *Coludes burh* is philologically a perfectly sound one, the one name being in fact a literal translation of the other. (The initial 'C' is softened into 'G' after the feminine noun 'caer'). The statement in the poem is merely the formal refrain to the effect that 'except seven none returned from *Caer Golud*'. What this or indeed the rest of the poem means I do not know, nor whether this obscurity is due to the badness of the translation* or to the incoherence of the original poem, or to both. One fact emerges, however, and that is that *Caer Golud* was the scene of fighting and was associated with Arthur, who is mentioned in the preceding line. Was it Arthur who built the mortared wall, *more Romano*, or did he inherit it from some Roman predecessor, or was he perhaps outside attempting to storm it?

The same poem contains several other Middle Welsh place-names of early (presumably dark age) sites:—*Caer Sidi*, *Caer Pedryvan*, *Caer Vedwyd*, *Caer Rigor*, *Caer Wydyr*, *Devwy*, *Caer Vandwy*, *Caer Ochren*. Not one of these has been identified. It does not of course follow because one of them is found to be in North Britain that the others must also be looked for there. Nevertheless this association of Arthur with the north strengthens certain other evidence about Arthur which we hope to lay before the readers of *ANTIQUITY* at an early date.

O.G.S.C.

HISTORICAL REFERENCES

- Vita Wilfridi Episcopi*, auctore Eddio Stephano, cap. xxxix (Rolls Series, *Historians of the Church of York*, ed. Jas. Raine, 1879, I, 55): ' . . . coenobium quod Colodaesburg dicitur . . . cui praesidebat sanctissima materfamilias nomine Æbbae, soror Oswini regis sapientissima '.
- Bede, *Hist. Eccles.* cap. xvii (Plummer, 1896, I, 243): ' . . . monasterium Æbbae abbatisae, quae erat amita [*aunt*] regis Ecgfridi, positum in loco quem Coludi urbem nominant '.
- Ib.* cap. xxiii (Plummer, 1896, I, 262): ' His temporibus monasterium virginum quod Coludi urbem cognominant, cuius et supra meminimus, per culpam incuriae flammis absumtum est '. (There follows the tale of Adamnan the Scot who was leading a life of prayer and continence there, consisting of eating and drinking only on Thursdays and Sundays and often praying all night. Bede then recounts the story of his sin and repentance, and of how he prophesied the destruction of *Coludes burh* as a divine judgment for its corruptions).
- Vita S. Cuthberti*, Auct. Anon: ' Veniens ergo [*S. Cuthbertus*], ut invitatus est ad coenobium quod dicitur Colodes byrig, manensque ibi aliquot dies . . . ' [*Ven. Bedae op. hist. min.*, ed. J. Stevenson, 1841, p. 266, corrected].

* It should be stated that the translations were not by Skene himself. The Book of *Taliessin* was done for him by the Rev. Robert Williams of *Rhydygroesau* (F.A.B. I, 17).

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- Vita S. Cudbercti, auct. Ven. Beda : 'Erat sanctimonialis femina et mater ancillarum Christi, nomine Æbbe, regens monasterium, quod situm est in loco quem Coludi urbem nuncupant' [ib. id. pp. 68, 69].
- Anglo-Saxon Chronicle, s. a. 679 : 'Coludes burh for barn mid godcundum fyre (celico igni, F.)' : Coludes burh was burnt with divine fire. (Copied from Bede).
- Liber Eliensis, p. 38 : 'Coldeburches hevet, quod latine caput Coldeburci dicitur'.
- Capgrave I, 303-4 : 'montem Coludi, id est Coldingham'.
- Book of Taliessin, xxx : 'Namyn seith ny dyrreith o gaer golud' (except seven none returned from Caer Golud). W. F. Skene, *Four Ancient Books of Wales*, 1868, I, 265, II, 182.

AN OLD CORNISH PLOUGH (PLATE III)

We are indebted to the *Western Morning News* (Plymouth), for the illustration of a primitive type of plough in use on the farm occupied by Mr J. Serpell, of Cleeve Farm, St. Ive*, Cornwall, where the photograph was taken. The age of the implement is not known but it is believed to have last been used at the time, now many decades past, when oxen were used for ploughing.

Mr R. D. GREENAWAY writes :—

'It may be compared with the old Breton plough now in the Pitt-Rivers Museum (illustrated in *ANTIQUITY*, 1927, I, 270), to which it bears a close resemblance and is equally entitled to be considered as an adaptation of the "caschrom". The share is missing, and there appears to be no trace remaining of a coulter. Unfortunately I have not been able to examine the plough myself or to obtain any further information about it from its owner, so that it is perhaps premature to state that it never possessed a coulter, but it is difficult to see from the photograph how this could have been attached, if it did exist. If the absence of the coulter is an original feature the plough represents a survival of a type even more primitive than that represented by the Breton one.

It will be noted that with the exception of the iron plate at the junction of handle and share-beam (which I am inclined to believe does not form part of the original implement but represents a later repair) the whole implement is made of wood, and wooden pegs have been used to fasten its components together. The traction-beam has no attachment at its distal end for yoking up (the extreme distal end is "off the picture" but in another photograph from the same source it is shown)'.

* St. Ive, 4 miles NE of Liskeard in east Cornwall (36 NE) and must not be confused with St. Ives in Penwith in west Cornwall.

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TWO FRAGMENTS (PLATES IV-V)

Cairo of the Caliphs rose from the ruins of other cities ; its stones are full of ancient inscriptions, too numerous to be heeded by the antiquary, unless they contain a royal name. Inside the north wall of the medieval city, between the Gate of Conquests (Bab-el-Futuh) and the Gate of Victory (Bab-el-Nasr) there is a hitherto unrecorded cartouche of Rameses II (1292-25) in limestone, about 2 ft. by 1 ft. (PLATE IV). It is on the wall of an unlit tunnel that runs along the rampart over a solid foundation and that was designed to protect the garrison from arrows and missiles ; overhead are the battlements, crenelated not only on the outer side but also toward the city, to overawe a turbulent populace. It would be difficult to fix the date of the tunnel. The solid base is formed by the north wall of the Hakim Mosque erected outside the old town shortly before the year 1000. When the fortified area of Cairo was enlarged in 1087 by the Vizier Badr-el-Gimâli, the wall was incorporated in the defences between the two new gates. Improvements were made by Saladin a hundred years later ; after an earthquake in 1303 it was again repaired, and finally Napoleon rescued it from a state of ruin in 1799 and added turrets. Presumably the tunnel was made by El Gimâli or perhaps by Saladin. As to the origin of the fragment, there can be no doubt that it came from the ruined town and temple of Heliopolis, five miles away on the edge of the desert. This was so extensively utilized as a quarry by the Cairenes that nothing remains of it today but the obelisk and a few bulky blocks of granite, too hard to cut up and too large for the mason to transport. Several of these bear the name of Ramses II and he is known to have added to the temple. The photo was of course taken with the flash on the left, showing the symbols incised in the stone. If the plate is placed in a light from the right, by an optical illusion they appear in relief.

Since the appearance of the note on Babylon of Egypt (ANTIQUITY, 1930, IV, 483-6), further excavation of the rubbish inside Trajan's Water-Gate at Old Cairo has brought to light a fine black granite sarcophagus, broken at the foot and without cover (PLATE V), now removed to the Museum of Egyptian Antiquities. It is that of a high court-official and priest. The sarcophagus must have been brought by water from a tomb in Upper Egypt to the place in which it was found at some time during the Christian or the Moslem era. It is difficult to understand why, in those days before collectors, so much trouble should have been taken ; perhaps it was intended for a public water-trough,

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broken in unloading from a boat at the gate and thrown aside. There is another well-authenticated case of such a sarcophagus, that of a lady of the xxvith Dynasty, which was used as a drinking-trough in the Qalaat-el-Kabsh or Castle of the Ram in medieval Cairo. It was named 'Hod-el-Marâsîm', Basin of Signs, owing to the hieroglyphics on it, and imbued with magic qualities. In the 17th century its water was believed to restore health to the sick by virtue of its graphic spells and in the 18th century it was reputed to turn everything immersed in it into gold. This latter sarcophagus is in the British Museum.

E. H. SAWYER.

NEOLITHIC HOUSES, DENMARK (PLATES VI-VIII)

It was the good fortune of the writer to visit during the 1933 season the excavations at Troldebjerg, near Rudkøbing, Langelands Island, Denmark, being carried out by Herr J. Winther. In *ANTIQUITY*, September 1933, p. 379, Herr Winther's account of the late passage-grave time settlement site of Lindø, to which he devoted many years of excavation, was reviewed. So far Herr Winther has carried out two seasons' work at Troldebjerg and has not yet by any means completed the excavation, but through his courtesy in supplying photographs and allowing their reproduction we are able to give readers of *ANTIQUITY* the advance information which the importance of the excavations demands. The Troldebjerg site dates from the first half of the passage-grave period. Now it is a commonplace that the vast bulk of the archaeological material from this period represents the grave furniture of the time. At Troldebjerg, however, on the lower slopes of a moraine and bordering a peat-bog¹ we have the remains of an extensive village of farmsteads, rich in archaeological material of this period. It has been possible to recover the house-plans owing to the use of stones for packing post-holes and supporting walls. The houses (PLATE VI) so far excavated are of rectangular form. They appear to have had one main wall only, the other side probably sloping down pent-wise from the apex of the roof, which was supported by a central row of posts as illustrated in the model reconstructed on the site by Herr Winther. (PLATE VII). The main side-walls survive as grooves flanked on either side by stones, while the central rows of roof-supports are indicated by

¹ Sections have been cut into the bog in order to relate the occupational scatter from the site to the peat, and so obtain a correlation with the local forest history. Cf. *Antiquaries Journal*, 1933, 266.

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series of beautiful stone-packed post-holes one of which is illustrated (PLATE VIII).

A certain amount of burnt clay, showing wattle impressions, was found along the line of the main walls. Herr Winther is of the opinion that the houses occur in pairs, each pair consisting of a dwelling-house and a cattle-byre. This is supported by the fact that whereas the former yield archaeological remains in great abundance, the latter are almost sterile. The culture layer is extremely rich and has yielded first and foremost great quantities of megalithic pottery and clay ladles. The stone types include the perforated double-bladed stone axe, transverse flint arrow-heads, numerous thin-butted and a very few thick-butted flint axes, numerous scrapers, and an interesting flake-implement, showing about one centimetre of primary flake edge isolated on either flank by secondary flaking from the bulbar flake surface.² This flint type occurs in some hundreds at Troldebjerg and may prove to be a valuable dating fossil. In conclusion one may express the hope that Herr Winther will give us his results in another volume as well illustrated as his last.

J. G. D. CLARK.

HISTORY FILMS

In order to enable the student to watch various happenings unfolding themselves simultaneously and continuously in various places it is proposed to make use of the cinematograph; this being the only means by which a continuity of happenings can be portrayed.

Such a film must, of course, be in diagrammatic form. Its permanent element would be a map; and the passage of time would be indicated by a speedometer in one corner which would tick off the passing decades or centuries. Events would be shown diagrammatically by variations of colour and shading which the lecturer would explain beforehand; occasionally also by one or two printed words appearing for a few moments on some part of the map; while here and there some pictorial or lighting effect might be contrived to make an important event more easily memorable.

Printing would probably be most strikingly visible if the letters were of bright white on a rectangle of black, and the picture on the screen ought probably to be quite 12 feet wide for details to be intelligible and words legible without making them cover unduly large pieces of the map.

'Captions' shown above or below the film (or both) would deal

² See *Antiquaries Journal*, 1934, XIV, p. 53.

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with subjects which it would be difficult to indicate diagrammatically. But these would be more for the benefit of the lecturer, helping him to keep his comments in time with the film, than for the students who would be fully occupied watching the map and listening.

The lecturer would, of course, be able to stop the film for as long and as often as he wished, and he could repeat any part of it at will. When dealing with any given situation he would be able to show it not only in relation to other contemporary situations, but also in the actual process of being developed or of being resolved. The film would in fact be a moving or movable map. It would supplement the ordinary static maps and constitute part of the usual furniture of the history lecture-room.

Of course, it would only be by seeing the film repeatedly—watching now one part of it, now another—that a student would become sufficiently familiar with it to visualize it and to remember it as a whole. But in proportion as this was accomplished it would be possible to grasp the connexions and interactions of different streams of events and to trace cause and effect over long periods of time.

All sorts of subjects could be dealt with in this manner—vast generalizations like the history of life on this planet, or long periods of human history ; such things as the spread of religions or the progress of exploration ; or even campaigns and battles.

The following is a rough indication of the sort of thing that might be done :—

Let us imagine a film intended to give a general idea of the happenings in Europe from the coming of *Homo Sapiens* till the dawn of agriculture (following Peake and Fleure).

The map would show Europe, North Africa and the Near East ; and the speedometer would indicate the passage of centuries in pretty quick succession. We should watch the coast line changing all the time. The blue ice caps would diminish and the khaki coloured tundra become gradually a little greener. On this background movements of population would be shown by the progression of little black dots, and the name of the culture with which the people in question are identified would be displayed for a few moments on that part of the map where the movement is taking place. (On this same label might be displayed a picture of a typical implement or painting, for as these black rectangular labels would only appear for a few moments, they might well be of considerable size—quite 18 inches square—thus ensuring that their contents would be quickly grasped).

PLATE I



REMAINS OF MORTARED MASONRY ON RAMPART OF COLUDES BURH, LOOKING WEST. (*See p. 202*)
Ph. O. G. S. Crawford

PLATE II



WALL AND FOSS OF COLUDES BURH, LOOKING EAST. (See p. 202)
Ph. O. G. S. Crawford

PLATE III



A CORNISH PLOUGH. (See p. 204)
By courtesy of the *Western Morning News*, Plymouth

PLATE IV



CARTOUCHE OF RAMESES II. (See p. 205)
Ph. E. H. Sawyer

PLATE V



BLACK GRANITE SARCOPHAGUS OF COURT-~~OFFICIAL~~ OR PRIEST. (See p. 205)
Pl. E. H. Sawyer

PLATE VI



A GENERAL VIEW OF THE EXCAVATIONS AT TROLDEBJERG IN THE SUMMER OF 1933
Note the glacial moraine on the right and the peat fen beyond the road on the left. Wall-grooves, post-holes and hearths are visible
in the foreground. (See p. 206)
Ph. J. Winther

PLATE VII



RECONSTRUCTION OF A HOUSE OF THE EARLY PASSAGE-GRAVE PERIOD IN DENMARK. (See p. 206)

Ph. J. Winther

PLATE VIII



SHOWING TYPICAL STONE-PACKED POST-HOLE AT TROLDEBJERG DATING FROM THE EARLY
PASSAGE-GRAVE PERIOD OF DENMARK, (See p. 206)

Ph. J. Winther

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We should thus see *Homo Sapiens* crossing the land-bridges and moving up Spain and Italy. Neanderthalers, indicated perhaps by a few tiny crosses, would fade out. Animals typical of the period might be shown in black outline on the map, that of the reindeer being left after the others had faded out in order to mark its predominance. We should watch the spread of the Alpine race and the arrival of the Solutreans. Aurignacians would trickle southwards over the Pyrenees and return later with Magdalenian culture. Meanwhile we should see the pine forests (indicated by little patches of darker green) spreading northwestwards over Europe. The mammoth would appear in outline and perhaps other Arctic fauna typical of Magdalenian times. These would fade out as the oak—in paler green—supplanted the pine, and the outlined reindeer would trot northwards up the map, the red-deer becoming gradually visible in his place. While this goes on successive phases of Capsian and Magdalenian culture would be indicated. Meanwhile, too, the Sahara will have been getting yellower as desert conditions intensified and we should be noticing the consequent dispersal and mingling of populations and fresh cultures and racial types being evolved. Towards the end of this film as the oak forests are seen growing denser, the light might grow dim over Europe to indicate the restricted life of the food collectors, and become brighter here and there in the East to show the dawn of agriculture and settled civilization.

All this time the lecturer will, of course, have been explaining and amplifying what has been shown on the screen—either dealing with everything, or, more probably, with one aspect of what has been shown (coast line, climate, fauna or flora, cultures or racial types, etc.).

A film dealing with the next few millennia would perhaps be a more typical example to take. In this case the speedometer would move more slowly and it would be unnecessary to consider flora and fauna (except perhaps to note the domestication of animals). Uncivilized populations would still be shown as a speckle of black dots, but colours would be used to indicate and distinguish between different civilizations. Highly civilized communities might be shown in light colours—pink, blue and yellow—varying in intensity and area as these civilizations waxed and waned. More lowly civilized communities might be indicated with dull coloured dots, and nomadic populations with dots of grey which would assume the colour of any civilized community they temporarily dispossessed. The student would, therefore, find himself looking at a Europe thinly speckled with black and

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even with an unfamiliar coast line in the neighbourhood of the North Sea long after colour had begun to appear in the East. He would watch not only the changing colour pattern there, but he would see veins of colour extending westwards as trade routes were developed and cultures diffused. On the other hand at the back of beyond he would notice black dots bumping into each other and starting displacements of population, the repercussions of which he would be able to follow through the centuries to their ultimate denouements.

By this sort of means any episodes which had hitherto been rather vaguely connected with things in general, would be clearly seen to take their places in the march of events. Series of happenings which even outlines of history are obliged to treat in separate chapters would now be seen going on concurrently, reacting on each other and foreshadowing future reactions.

Films dealing with recent periods for which the historical material is more abundant might be put through at a somewhat slower 'tempo', but they would have to be reduced to the same simplifications as the others. They would no doubt be more difficult to deal with but one can imagine a good film dealing with the impact of East and West—successive invasions of nomadic peoples, Mongols, Tartars, Turks, etc., which could be extended to the present day.

Such films ought to present a bird's eye view with greater clarity than can easily be obtained by reading chapter after chapter or book after book. For instead of following first one thread and then another, harking backwards and forwards in time and wandering from place to place, we should be watching the whole pattern of events (in simplified outline, of course), unfolding itself as it actually did through the years. Events diagrammatically expressed would be *actually seen happening* in their true relation to each other both as regards place and time.

ALAN BEETON.

CURRENCY-BARS

Most readers of the entertaining controversy about 'currency-bars' in *ANTIQUITY* (March and June, 1933) will probably agree with Mr Reginald Smith, and accept the reading *taleis* in Caesar, B.G. v. 12. I gather that Mr Hulme proposes to read here 'utuntur aut aere aut nummo aureo aut anulis aut aliis ferreis' (March, p. 68, line 18). Is not this taking too great a liberty with the text, corrupt though it is? There is less MS evidence for *anulis* than for *taleis*, and no authority for including both *anulis* and *aliis*. Mr Hulme's objection that *talea*

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means a wooden bar is, I think, sufficiently removed by Mr Reginald Smith's remark on the qualifying adjective *ferreis*; and add that Vitruvius uses *talea* of beams which are very unlike the ordinary meaning of the word (*e.g.* reinforcing beams in walls, I. 5; bridge foundation-piles, v). It is curious that neither of the disputants refers to the currency-bars from Wayland's Smithy, Berks, which Mr Hulme figures on p. 61, and which Mr Reginald Smith, himself if I remember aright, discovered in 1919 (*Berks. Arch. Journ.*, xxxii, 79, xxxiii, 22b., reprinted from *Antiquaries Journ.* 1921, I, 183-98). These have no resemblance to swords in any stage of manufacture; and a 'currency tradition' is attached to the site. Everyone knows the legend of the invisible smith, which, together with the objects themselves, affords evidence definitely in favour of the 'currency-bars' theory.

G. W. B. HUNTINGFORD.

TERRACES IN KENYA

Since my paper in *ANTIQUITY*, June 1933, was written, some terraces have been found at Tambach, about 20 miles east of Eldoret (lat. $0^{\circ} 36' N$, long. $35^{\circ} 32' E$), for a short account of which I am indebted to the kindness of Mr S. F. Deck, Provincial Commissioner, Nzoia. Two sets of terraces have been found, separated by a strip of level ground:—

1. The upper terraces, which lie at the foot of a precipice 800 feet high, have a natural slope of about 40° . The terracing averages 4 feet wide, with steps about 1 ft. 6 ins. high.
2. The lower set is less steep, the slope having an angle of about 25° . The terraces are 10 feet to 30 feet wide.

In both sets there are stone enclosures: a group in the lower set consists of 4 enclosures joined together; diameters, 13, 17, 19, and 31 feet. The largest is joined to the others by a walled passage.

G. W. B. HUNTINGFORD.

DOMESDAY WOODLAND IN EAST ANGLIA

The outcome of the Gloucester Gemot at the end of 1085 was the sending out of officials to collect from each shire, hundred, and vill, the information now preserved in the two manuscript volumes which, within a century of their compilation, had become known as the Domesday Book. The larger of the two volumes deals with the greater part of England, the smaller deals only with the counties of Norfolk, Suffolk,

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and Essex. Although so important in matters legal and economic, its contribution to a reconstruction of the contemporary geography has not yet been fully extracted. And in this connexion East Anglia is particularly fortunate because the details contained in the 'Little Domesday' are much fuller than those given in the larger volume.

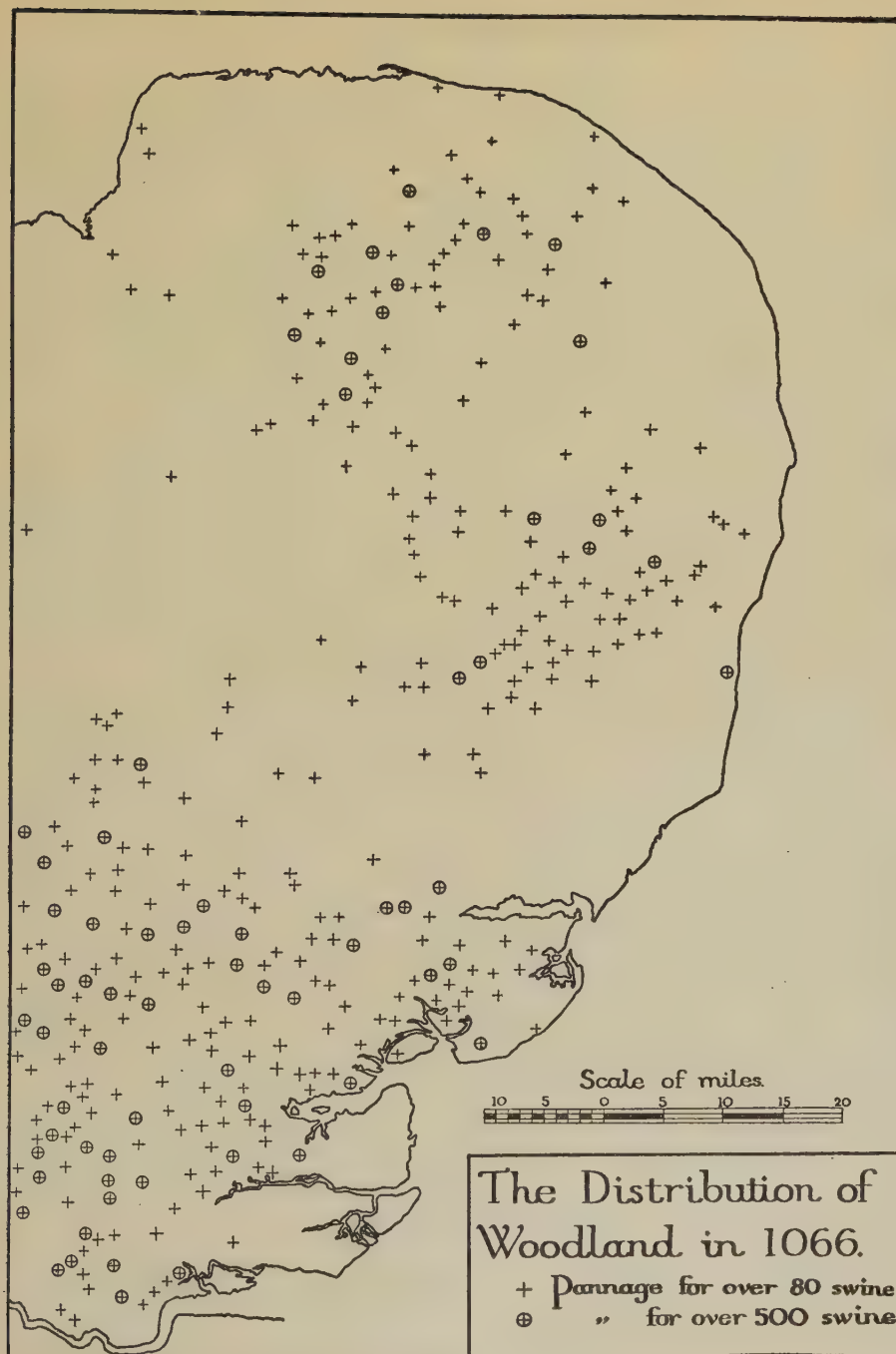
Three general points have to be noted about these details :

(1) The plan adopted by those who compiled the present books from the original returns is only in part geographical; while each county is dealt with separately, within each county the information is arranged not on the basis of hundreds and vills, but under the headings of the tenants in chief. For the most part the possessions of these tenants were scattered about in various hundreds, and therefore the information relating to each vill has to be assembled from several different pages.

(2) 'One great purpose', wrote Maitland, 'seems to mould both its form and its substance; it is a geld book', primarily intended for assessment purposes. Naturally this has some bearing upon its contents. Topographical information is thus nothing more than a by-product, and in many ways it is very meagre and full of surprising lapses. Indeed, when an item is recorded for any vill, we cannot always assume that it was geographically within the boundaries of that vill; all we can say is that the vill was responsible for this particular set of profits. In the case of sheep and swine there was a good deal of intercommoning; but, for instance, where there was a group of adjacent villages all responsible for wood-profits, we may safely conclude that it was a wooded district.

(3) Most of the entries state what the land was worth at the death of Edward the Confessor in 1066, what it was worth when its present owner received it, and its value when the returns were compiled. For each was given the number of villeins, cottars and other workers, the number of ploughlands and oxen, the assessment to the geld, and particulars about churches, mills and fisheries, together with other miscellaneous information. Among the latter come the details about wood.

This information about woodland was given in a variety of ways. Very frequent was the formula 'there is a wood x leagues by y leagues'; sometimes the extent was given in the form of acres, or hides, or hedges—all ways which make cartographic representation difficult. But in many counties the usual formula was 'there is pannage for x swine', for pigs constituted an important element in medieval economy and they fed



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in the woodland. This latter was the normal wood-entry in the ' Little Domesday ' ; any other reference was so very rare as to be unimportant. The only considerable exception was the Norfolk hundred of Clacklose whose wood-entries were given in terms of acres. Stonham Aspoll in Suffolk too had $1\frac{1}{2}$ acres of woodland and 28 acres ' part woodland '. How accurate were these figures ? In the case of the larger entries, a thousand or several hundred swine, the round numbers would seem to be estimates rather than actual numbers ; but on the other hand there are many instances of more detailed figures terminating in odd or even numbers ; and occasionally the record can be particularly precise, as in the case of ' Strinchorn ' (Itteringham), in Norfolk, where there were two sokemen who had ' wood for 18 pigs and two thirds of another . . . '. On the accompanying map the numbers 80 swine and 500 swine have been chosen as index figures to show moderate and large amounts of wood respectively. This woodland is seen to be concentrated in three well defined areas, one in Norfolk, one in Suffolk, and the other to the south, where the dense woodland of Essex was situated. These were, generally speaking, the areas where there were fewest sheep. The map was compiled in the Department of Geography at Cambridge.

The distribution of clay is frequently taken as a key to the distribution of woodland ; but in East Anglia, while the two distributions overlap to a considerable extent, they do not overlap sufficiently to justify such a generalization. Some areas of boulder-clay have little or no wood ; this may have been the result of clearing. But there are large stretches of woodland in non-clay areas, and it is evident that a certain caution is necessary in making deductions. Apropos of the distribution of Anglo-Saxon cemeteries, for instance, it has been said that the forest of Norfolk was less dense than that of Suffolk. The map gives no indication of this. In the south, however, the great woodland of Essex corresponded closely to the exposure of the heavy London Clay. It has to be remembered that the state of affairs shown by the map only represents a phase in the story of East Anglian deforestation. Clearings in pre-historic as in later times were no doubt frequent. In the latter half of the eleventh century, however, the jar of conquest made such changes rapid. Here are some examples of the clearing that took place in the years immediately preceding the Inquest :

	1066	1086
NORFOLK :		
Cawston	1500 swine	1000 swine
Baxton	1000 „	200 „
Woodrising	200 „	166 „

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SUFFOLK :	Homersfield	600 swine	200 swine
	Leiston	500 "	200 "
	Coddenham	180 "	113 "
ESSEX :	Coggeshall	600 "	500 "
	Clavering	800 "	600 "
	Great Dunmow	400 "	350 "

The numerous medieval assarts continue the story, and the fragments of woodland marked on the earliest English county maps, some time after the close of the Middle Ages, register a further stage in the process.

H. C. DARBY.

A FLINT-MINER'S DWELLING AND A BRONZE AGE FARM IN SUSSEX (PLATES IX-XI)

Excavations carried out during the summer of 1933 by the Worthing Archaeological Society on New Barn Down, a spur of Harrow Hill, near Worthing, have yielded some striking new evidence bearing on the subjects of two recent papers in *ANTIQUITY*.*

(1) A neolithic dwelling-pit with a small annexe was the first surprise, for it was stumbled on quite unexpectedly. A fair quantity of Windmill Hill pottery, including the greater part of a hemispherical bowl, since restored, indicates the culture of its occupants, and most probably also that of the neighbouring flint-mines on Harrow Hill, a little more than half a mile away. Among the few rough flint tools found in the pit were two celts, one polished and one unground, but both damaged by fire. Both have clearly been made from mined flint, and the unground specimen has been executed in the characteristic technique of the flint-mines. There is therefore a very strong inference that the neighbouring Harrow Hill mines are to be ascribed to the Windmill Hill phase of the neolithic, and not (as has been claimed for the Blackpatch mines, a mile away) to the Beaker period. It is pleasant to conceive of this pit as representing the semi-basement abode of a capitalist of the mining industry of his time, living at a respectable distance from the works.

(2) The main objective of the excavation was to investigate a group of earthworks which have turned out to be nothing less than a farm of the late Bronze Age Deverel-Rimbury culture, complete with

* Grahame Clark and Stuart Piggott, 'The Age of the British Flint-Mines', *ANTIQUITY*, 1933, VII, 166; E. Cecil Curwen, 'Ancient Cultivations', *ANTIQUITY*, 1932, VI, 389.

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farm-yard, round huts, another oval enclosure (probably a fold), 2000 feet of contemporary road, and several acres of lynchets conforming to the same system—the whole being unobscured by any later occupation. In every particular—in its situation and in the size and shape of the fields—the farm is a characteristic example of the so-called Celtic field-system, which flourished throughout the Iron Age and Roman periods. We are thus able to recognize for the first time with certainty (what had been little more than hinted at before) that the beginnings of the Celtic field-system in Britain go back as far as the late Bronze Age, thus linking that period culturally with the Early Iron Age, rather than with the middle Bronze Age. The full report on this work is to appear in the *Sussex Archaeological Collections*, LXXV, this summer.

Another agricultural settlement, suspected to be of the Bronze Age, is to be examined by the Brighton and Hove Archaeological Club on Plumpton Plain, near Brighton, during August. E. CECIL CURWEN.

THE MILE DITCHES AT ROYSTON (PLATES XII–XIII)

These ditches are not marked on the Ordnance Maps, and are perhaps the least known of all the East Anglian ‘dykes’. They were first noticed by Beldam in 1868 (*Arch. Journ.* xxv, 37); and there was little to add to his account when Dr Fox wrote his book in 1923 (*Archaeology of the Cambridge Region*, 127). They are situated $1\frac{1}{2}$ miles west of Royston in Hertfordshire, and run from the chalk escarpment (called here Therfield Heath) to Wellhead Springs at Bassingbourn, $1\frac{1}{2}$ miles to the north (Herts. 4 NE; Cambs. 58 SW). At the foot of the slope runs the modern highroad from Royston to Baldock, following the line of the old Icknield Way.

Last January I went to Royston to investigate the Mile Ditches. All that was then known was that they were ‘visible only for a few hundred yards on the heath, from the Icknield Way southward’ (Fox). North of the Icknield Way Beldam, writing nearly 70 years ago, said ‘they have wholly disappeared among the modern enclosures, but they are well remembered, and my neighbour, the late Dr Webb, Master of Clare Hall, accurately described their course to me . . .’ I had no difficulty in finding the ditches on the heath; they begin 70 yards to the east of the tumulus. The westernmost is banked on both sides, the middle one has a bank on the east, and the eastern is not well enough preserved to say on which side the bank was. But not only could I see

PLATE IX

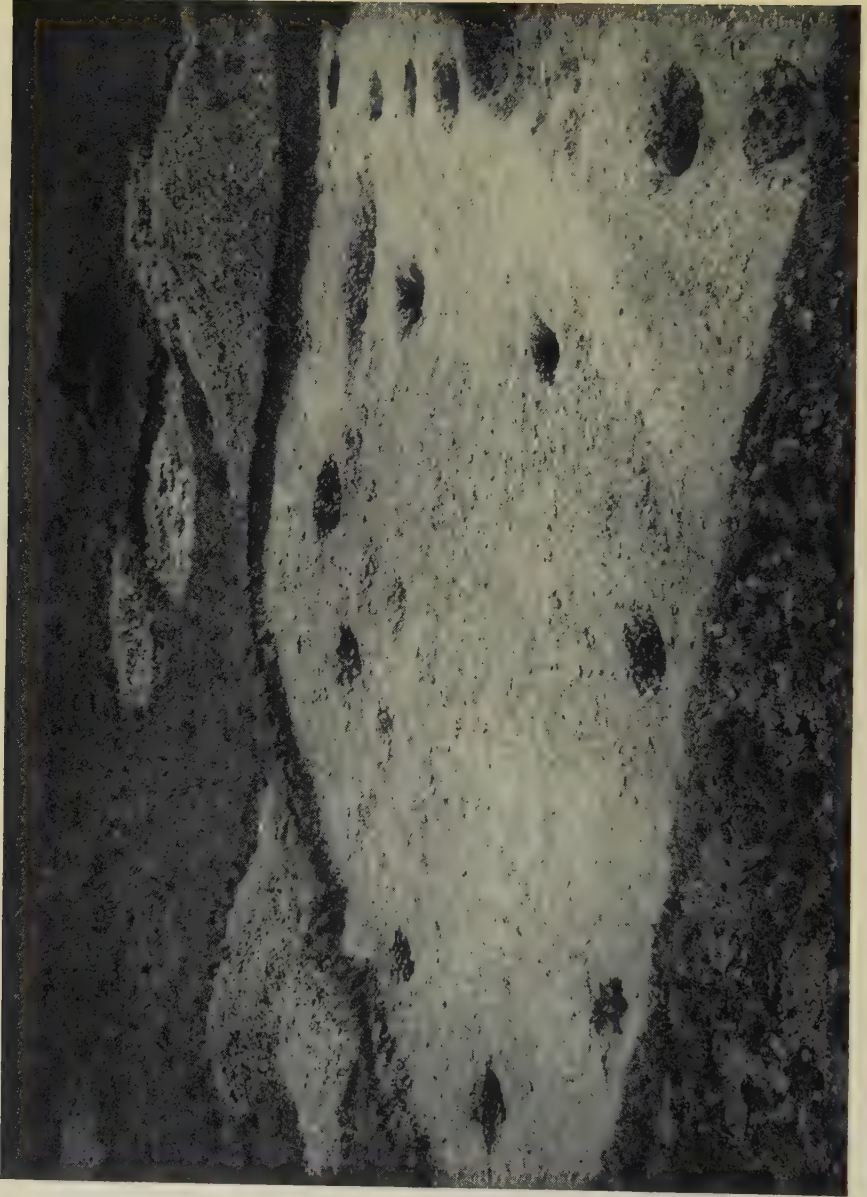


HARROW HILL (CENTRE) AND NEW BARN DOWN (FOREGROUND) LOOKING NORTH. (See p. 214)

The dimples slightly southeast of the centre of the picture mark the sight of the Bronze Age lynchets of which can be seen to the right. The road leading to the farm lies to the right of the modern barn (on left of picture) and is parallel to the hedge. The flint mines can be seen as dimples on the summit of Harrow Hill.

Air-photo by A. G. Head

PLATE X



NEW BARN DOWN, SUSSEX: POST-HOLES OF A ROUND HUT OF LATE BRONZE AGE FARM, AND OF
SURROUNDING PALISADE. (*See* p. 215)
Ph. E. Cecil Curwen

PLATE XI



NEW BARN DOWN, SUSSEX : NEOLITHIC PIT-DWELLING. (*See* p. 215)

Ph. E. Cecil Curwen

PLATE XII



THE MILE DITCHES, ROYSTON, 11 January 1934. (See p. 217)
J. V. G. W. G. A. 1934

PLATE XIII



THE MILE DITCHES, ROYSTON, 17 March 1934. *See p. 217.*
Ph. Major G. W. G. Allen

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the ditches on the grass heath, but, from the hill I saw three parallel black bands continuing their line across the arable land fifty feet below me ! So plain were these bands of darker soil that I was actually able to measure their width by pacing (overall width, 21 paces ; western band $3\frac{1}{2}$ paces, middle and eastern band, $2\frac{1}{2}$ paces each). I could follow them for some distance until they finally faded out in the stubble.*

Here was an abvious case for air-photography, and I wrote that evening to Major G. W. G. Allen, asking him to have a shot at them. This he did on 11 January, and the result appears on PLATE XII. The three parallel bands are seen with startling clearness crossing first the railway and then the modern road (Icknield Way). Their course is broken by a broad dark band 16 paces wide, running parallel to the road, and nearer to it than to the railway. (This probably represents a silted-up hollow track of the Icknield Way, formed by the traffic crossing a low knoll.) The three marks can be followed with the eye until they meet three faint marks on the slope. It was in order to obtain a better photograph of these latter perfect portions that Major Allen flew there again on 17 March, when he took the photograph reproduced on PLATE XIII. His second photograph succeeded in achieving this, but lo, the three parallel bands have completely vanished ! Presumably they were obliterated by a slight fall of rain which darkened the soil and thereby destroyed the contrast. It is practically certain that the field between road and railway had not been reploughed in the interval between the taking of the two photographs ; when I passed it in the train on 21 April I observed young corn just beginning to sprout.

The two photographs are an excellent proof of the necessity of seizing the right time to photograph a site. They show, too, what mere soil, unaided by crops, is capable of revealing. It should also be pointed out that, although the best view naturally is that taken from an aeroplane, the air-photo shows nothing that was not visible to a ground observer. The black bands in the field were indeed so sharply defined that I was able to measure their width (given above). There is no magic in the air-view or camera ; it is merely the angle of sight thereby obtained that enables discoveries to be made, as I have often pointed out.

Beldam had excavations conducted to determine the relative age of the Icknield Way and the Mile Ditches, as a result of which it was

* Air-photographs show them continuing a mile beyond the railway, to a point east of Limlow Hill (o.s. air-photo. no. 374).

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'ascertained that the ditches terminate on either side of the road, leaving a space of solid chalk of about 16 or 18 feet in width, over which the ancient road undoubtedly passed, and proving therefore the priority of the road to the ditches'. Now this statement is unsatisfactory in many ways. It compels one to accept the authority of an observer of the pre-scientific period, unsupported by any sectional drawing, plan, or even detailed description. It was made at a date when antiquaries more often saw what they wished to see. It assumes that the ancient Icknield Way was confined to the narrow width of the modern road; this is most improbable and is contradicted by the evidence of these photographs, showing parallel tracks beyond the roadway and silted-up hollow tracks on the other (near) side of it. In open country, as here, the prehistoric downland tracks were unconfined, and remained so down to modern times.

It will be noticed however that the ditches spread out when they reach the brow of the escarpment. Now it seems possible that the easternmost may have continued along the escarpment; for amongst the tumuli further east are two detached portions of ditch, with bank on north or lower side, and an overall width of 7 paces. These fragments are of the same type as the Grim's ditch on the escarpment of the Berkshire Downs. This, and others like it elsewhere, should be prehistoric or Romano-British, if superficial appearance and measurements may be trusted. Further, the westernmost Mile Ditch is a bivallate, and such are generally regarded as not later than the Romano-British period.

The many other interesting features of the Royston country must be reserved for description on another occasion. O.G.S.C.

DYKE NEAR BEXLEY, KENT

The boundaries of a grant of land at Bexley,¹ dated A.D. 814, contain a reference to a 'faestendic'. This can be identified as an earthwork half a mile east of the river Cray, in Joydens Wood.²

¹ *Cartularium Saxonicum*, I, 346. Grant by Coenuulf, king of the Mercians, to Uulfred, archbishop of Canterbury, of land at Bexley, on the river Cray, co Kent. A.D. 814.

The text is taken from a nearly contemporary copy of the charter.

² A plan of the earthworks in this wood accompanies the paper on 'Deneholes and Other Caves with Vertical Entrances', by F. C. J. Spurrell, in *Arch. Journ.* xxxviii, pl. 1, p. 405.

The dyke is shown on the plan, but is not mentioned in the text.

DYKE BEXLEY KENT

8SE. 9SW,
SCALE 0 1000 FT.



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The ancient boundaries follow the modern parish boundary. The relevant section is as follows :—

‘Ærest up of crægean on fulan rithe’ (First up from the Cray to the foul brook).

The ‘foul brook’ is a small stream which runs almost straight from Stankey Wood towards Crayford railway station.

‘andlang rithe oth thone fæstendic’ (along the brook to the strong dyke).

The parish boundary follows the dyke from Dartford Lane as far as the footpath through the wood.

‘andlang dices oth thæt gebýhte’ (along the dyke to the bend).

The bend is the point on the footpath at which the parish boundary leaves the dyke, which here turns sharply through a right angle towards the south.

‘of tham gebýhte andlang hagan oth cýninges healh’ (from the bend along the hedge to king’s hollow).

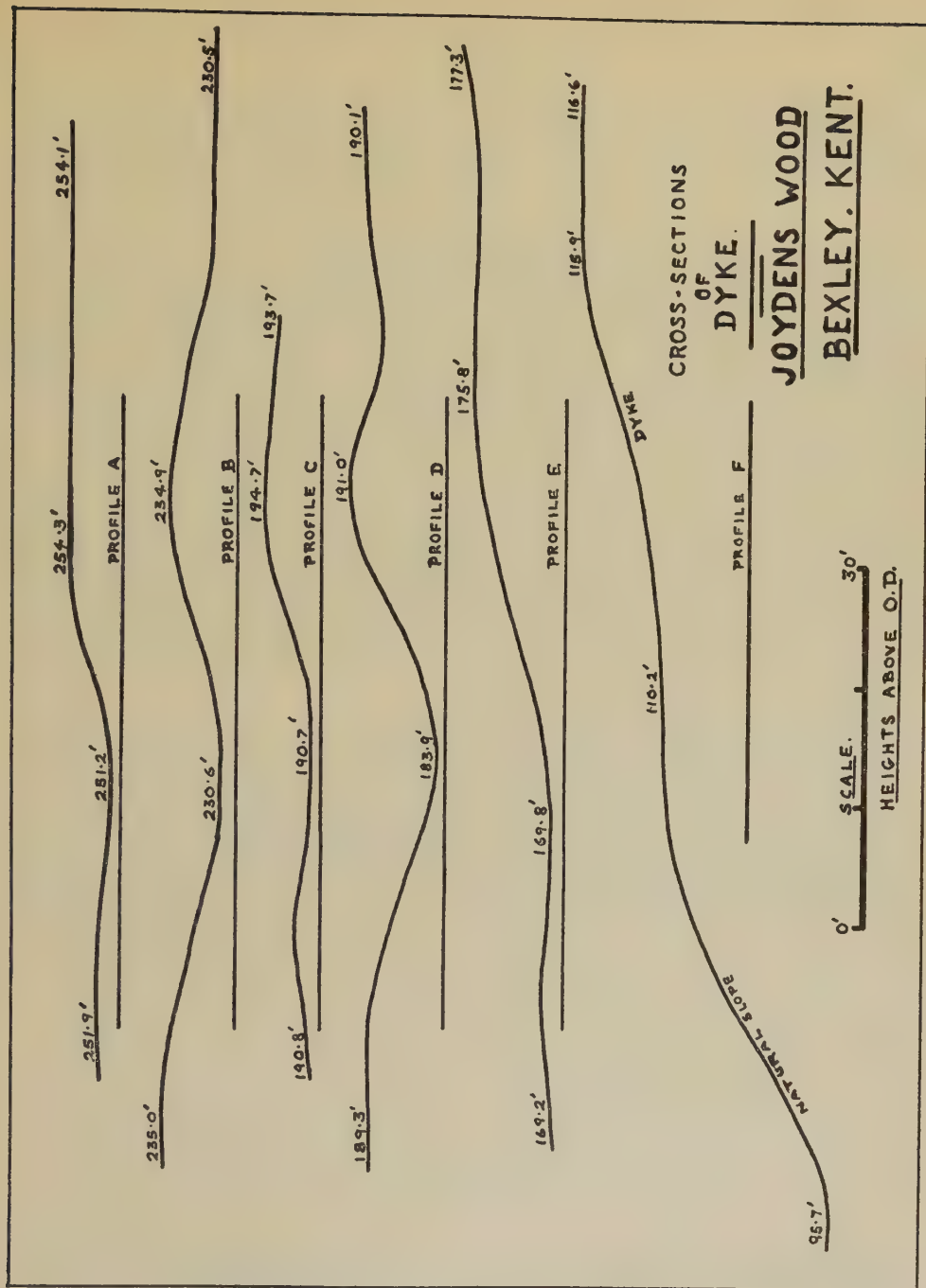
Cýninges healh must have been somewhere near Cavey’s Spring.

‘thanon andlang hagan ut on crægean . . .’ (thence along the hedge out onto the Cray).

The general direction of the dyke is from north to south, with the ditch on the west, towards London. The subsoil is Thanet Sand north of the footpath, Woolwich beds on the higher ground to the south. North of the path, the character of the dyke has been much altered by cultivation, even in those parts which are now woodland, but to the south the ground seems mostly undisturbed.

North of Tile Kiln Lane, the dyke lies on the east side of a shallow valley which falls towards the north. Profile F is typical of this section, but the steep natural slope, on which the dyke ends, dies out a short distance south of Dartford Lane. At Tile Kiln Lane, the dyke turns west to cross the valley. Between the lane and the wood, cultivation has destroyed the dyke, but the line is continued by a lynchet facing east, just below the brow of the hill on the west side of the valley. On entering the wood, the dyke curves sharply through a right angle (profile E), and runs west for 600 feet, the footpath following the top of the bank. At a fallen-in denehole on the north of the path, the dyke turns at right angles towards the south. This is the ‘bend’ of the charter boundaries.

South of the footpath, the dyke is fairly uniform in character. From 500 feet to 1100 feet from the path is a very well preserved section. (Profile D.)



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Between the path and the valley, the ground slopes slightly to the west. South of the valley, the dyke runs for 1500 feet just below the brow of the hill, facing uphill. A cart-track follows the ditch for 1100 feet.

There are three breaks in the continuity of this part of the earthwork. For 100 feet south of the footpath there is no trace. The dyke seems to have been destroyed here by cultivation. On the south side of the valley, about 1500 feet south of the footpath, the dyke vanishes for a distance of 700 feet. There are traces of ancient cultivation here, but there is nothing to indicate whether the dyke ever existed. The third break is 700 feet from the southern end of the dyke. It is 200 feet long, where the line crosses a patch of marshy ground. It seems to be original.

In addition to these breaks, there are two narrow gaps, both apparently contemporary with the earthwork. One, 200 feet south of the footpath, lies on the line of a hollow way running east and west, and is approached by a causeway crossing the ditch. It is about 10 feet wide. The other, 1200 feet from the southern end of the dyke, carries the surface drainage into the head of the valley. It is 50 feet wide, and 4 feet deep from the top of the dyke.

The dyke seems to have continued to the south of the wood, but the ground has been cultivated for many years.

There is no evidence as to the relation of the dyke to the rectangular earthwork³ on the east, or to the numerous deneholes in the wood.

The dyke is of a post-Roman type, and is shown by the charter to be earlier than the 9th century. It may perhaps be connected with the battle of Crecganford, A.D. 457.

A. H. A. HOGG.

³ Excavated by Mr F. C. Elliston Erwood. Earthworks Report, 1926, p. 24.

Recent Events

The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.

Professor Gordon Childe's Monro lectures, delivered in Edinburgh during February, are reported in *The Scotsman* for the 6, 9, 15, 16, 20, 22 and 27 February, and 1 March. It may here be stated that a new and rewritten edition of his *Most Ancient East* has just appeared (Kegan Paul, 15s) and will be reviewed in due course. The book is intended for those who wish to obtain a general idea of the origins of civilization in Egypt, Mesopotamia and India, and is a lucid and authoritative presentation of the facts.



Referring to two recently published books (*Functional Affinities of Man, Monkeys and Apes*, by S. Zuckerman, and *Man's Early Ancestors* by Le Gros Clark) Professor Elliot Smith said that Man

'was certainly sprung from a group of apes which many millions of years ago split into two series, one from which the chimpanzees and gorillas were derived and the other from which man's ancestors sprang. Both events in all probability occurred in Africa. The study of the evidence upon which these inferences were based provided a fuller understanding of the nature and potentialities of man and human nature. The fact of the common origin of man and the apes was revealed in the amazing identities of structure, so that it was a simple statement of easily demonstrable fact to call man a big-brained ape—a phrase that still aroused as intense emotions of resentment as did Huxley's so-called blasphemous lectures more than 70 years ago. It was none the less the duty of men of science to state facts plainly and unequivocally'.

He continued :—

'The outstanding distinctive character of man was his muscular skill, which found expression in the acquisition of speech. We

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could infer from the casts of the brain cases of Peking Man, Pithecanthropus, and Piltdown Man that speech came into being during the transformation of ape into man. The possession of speech enabled men to accumulate knowledge and traditional ways of thought and action, and brought them more and more under the domination of customary rules of conduct and opinion ; for it was easier to borrow than invent, to copy than to think. Thus mankind became bound together by the slavery of imitation'. (*The Times*, 12 February, p. 9).



' When flying over the centre of Lake Daiet-er-Roumi an airman saw the ruins of a great quadrilateral building beneath the clear blue waters. Each side measured about 200 feet. At each angle was a square construction, and at one end there was a tower and a separate round structure'. (*Evening Standard*, 6 February).

We quote this for what it may be worth, without any guarantee. If the ruins can be seen they can also be photographed. No such photograph of submarine antiquities has ever appeared, though many claims to have *seen* them have been made. If this claim is well founded it would be well worth the while of an enterprising newspaper to send an aeroplane to photograph the remains.



We flew up and down along the sea-front at Alexandria in the winter of 1928, trying to discover the masonry alleged to exist there ; but, apart from some possible remains in quite shallow water, we could discern nothing owing to the silt in suspension and the roughness of the sea. It does not necessarily follow that something may not be detected there under more favourable conditions.



A portrait of Sir Flinders Petrie is to be presented to University College on the occasion of his retirement from the Edwards Professorship of Egyptology, after a tenure of 40 years. (Subscriptions will be received by Sir Henry Lyons, 3 York Terrace, Regent's Park, London, N.W.1).

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An exhibition of antiquities from Arpachiyah, Assyria, was held in the British Museum during March and April. 'Most of the finds are painted pottery, some of the earliest specimens ever recovered from Mesopotamia, and the oldest known in the land of Assyria. None of the finds is dated later than 4000 B.C. and some may be much earlier.

The history of ancient Assyria is found to be as old as, and perhaps older than, that of the pre-flood settlements at Ur in South Mesopotamia. It is fitting that the memory of Gertrude Bell should be associated with an expedition which has discovered these remarkable antecedents of Assyrian civilization.

The objects on view were all found in the course of the first active archaeological campaign of the British School of Archaeology in Iraq'. (*The Times*, 19 March, p. 8).



Some of our readers seem to have been mildly horrified at the account of human sacrifice published in our last number (March 1934, pp. 58-62). The rite, however, is one that is very common amongst people in a certain stage of development; our own ancestors practised it here in Britain; and the facts of history must be faced. Amongst the Jews it seems to have been quite common; the best known instance is Jephthah's cremation of his only daughter in fulfilment of a vow (JUDGES, XI, 29-39; for the commonness of the practice in later times see JEREMIAH VII, 30, 31). This procedure, indeed, had divine authority (LEVITICUS, XXVII, 28, 29). In Britain, Columba was reported to have sacrificed one of his companions on the foundation of his establishment at Iona (see *ANTIQUITY*, December 1933, p. 465), but the authority for the statement is late and of Irish origin. Human sacrifice is now illegal in Palestine, India and other countries where it formerly flourished.



Mr T. D. KENDRICK writes :—

'In my paper "Polychrome Jewellery in Kent" (*ANTIQUITY*, December 1933, p. 429) I refer to the opaque cobalt glass, obviously imitating lapis lazuli, that was used in the ornamentation of many Style A cloisonné jewels. Tests very kindly made by my colleague Dr L. J. Spencer, Keeper of Minerals, of the blue fillings in the British Museum jewels of this Kentish kind showed that we have, in fact,

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nothing but pastes ; and I did not venture to include lapis lazuli—which comes from the East—among those imported luxuries and foreign fashions that in my view represent the influence in early Kentish archaeology of Byzantine Canterbury. I am glad to say, however, that one famous jewel has since come nobly to my rescue, for my friend Dr D. A. Allan, Director of the Public Museums at Liverpool, now assures me positively, after making careful tests, that the blue material in this resplendent brooch is really lapis lazuli '.



The Oriental Institute of Chicago is carrying out excavations, directed by Dr H. Frankfort, at Tell Asmar, a site described as ' north-east of Baghdad, between the Diyala river and the Persian border '. The most important of last season's discoveries was a stratified series of temples. The uppermost temple belongs to the period of Sargon of Akkad (' about 2500 B.C. '). Below this is one with the same ground-plan built of plano-convex bricks and belonging therefore, it is stated, to the Early Dynastic period. (*Times*, 10 July 1933).

This season a third temple has been found below these other two, also built of plano-convex bricks, and belonging to the Early Dynastic period, but ' to an earlier part . . . than has yet been explored elsewhere. It corresponds with the accumulation at Ur of the rubbish-heaps into which the famous tombs were afterwards dug '.

In a shrine of this temple were found

' a group of no fewer than 12 complete statues [statuettes ?] in a fine state of preservation, ranging in height from 12 in. to 30 in. Here, for the first time, we obtained a full impression of the polychrome effect of Sumerian sculpture. The faces were strongly set off by the black hair, to which bituminous paint was still adhering. The men wore long locks, hanging before the shoulders, and long, wavy beards, cut square at the ends. The eyes were inlaid, the eyeballs being made of shell and the pupils of bitumen or lapis lazuli '.

After some admittedly dangerous speculations about the rate of accumulation of debris, Dr Frankfort concludes :—

' The earlier part of the Early Dynastic Period [to which this third, lowest, temple is assigned], shown by our pottery to antedate the tombs of Ur, is represented by two metres of débris and would

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have lasted therefore approximately from 3000 to 2800 B.C. The importance of this result can only be seen in its true perspective if we remember that the date of the tombs of Ur is one of the most hotly debated problems in contemporary archaeology ; for neither Mr Woolley's date of 3500 B.C., nor that of his German critics, which places them at about 2600 B.C., nor those of the majority of scholars, who occupy intermediate positions between these extremes, has found general acceptance '. (*Times*, 5 April, pp. 11).

It will be evidence that the Oriental Institute's work is likely to advance knowledge and perhaps to settle some of the most controversial points in oriental studies.



The conclusion of ' the last season's work which the joint expedition of the British Museum and the Museum of the University of Pennsylvania will, as such, undertake on the site of Ur ' deserves some mention in these pages. We are not without hopes, from the phraseology of the above quotation, that it may not in fact conclude Mr Woolley's work on the site ; but there must be a huge accumulation of records to deal with, and not even Mr Woolley can fairly be expected to lead a double life, in field and study, without some occasional respite.

The last season's work was devoted to the clearance of a depth of 50 feet of solid débris, beneath which was found, strictly according to plan, the cemetery of the Jemdet Nasr period. The successful conclusion of such a task is in itself a minor triumph, though one of a kind we are now so familiar with at Ur that we are apt to underrate its real merits.

Two hundred graves were found ; and no less than seven hundred and seventy stone vessels amongst the grave goods. These, though all of foreign material—there is not the smallest fragment of natural stone at Ur—were of local manufacture.

The cemetery will enable one of the two classic predynastic periods to be securely correlated with other periods represented at Ur, and thus provide a rigid framework for the chronological history of the site, and of Sumeria generally. (*The Times*, 13 April, p. 13 ; illus. p. 18).



An Expedition is at work in the Northern Frontier Province of Kenya Colony carrying out a topographical and geological survey, and

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studying the archaeology of the area. It has the support of the Royal Society, the Royal Geographical Society, the British Association and other scientific societies and expects to be away for about a year. (*The Times*, 3 January 1934, p. 9).



Some excellent illustrations of the sculptures on the monumental stairways at Persepolis, which were discovered by the Chicago University Oriental Institute Expedition under Professor Herzfeld, were published in *Ill. London News*, 27 January 1934. The three sections of photographs reproduce a continuous panorama of the stairway, about 292 feet long, leading to the Hall of Darius, and enable one to form some idea of its magnificent conception.



An important example of Irish gold-work of the Late Bronze Age has been added to the well-known collection of similar objects in the National Museum of Ireland, Dublin. It is a collar of exquisite workmanship and was found near Ballyvaughan (on the shore of Galway Bay), county Clare. The collar weighs 8.9 ozs. and the external width is 12¼ inches. It is believed to date from about 700 B.C. An illustrated description by Dr Adolf Mahr, Keeper of the Museum, appeared in *Ill. London News*, 17 February, 1934.



An account of the finds made during the 5th season's work of the French Archaeological Expedition at Ras Shamra is given by Professor Claude F. A. Schaeffer, the Director, in *Ill. London News*, 3 March 1934. The most important were two gold vessels—a bowl and a patera. The bowl is 17 cm. in diameter and covered with reliefs in repoussé, the principal subject being a lion-hunt. The vessels are dated about 14th century B.C. and are among the most beautiful examples of Phoenician work. The bowl and patera are illustrated in colour.



The chief finds during excavations at a Palaeolithic Settlement near the village of Malta, about 37 miles from Irkutsk in Siberia, are

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described by Dr Alfred Salmony in *Ill. London News*, 17 March 1934. They consist of statuettes of women, which compare with those found at Willendorf, Lower Austria, and date the Malta examples to Aurignacian times ; a perforated plaque decorated on the sides with spiral designs and snake pattern ; specimens of bird sculpture in mammoth ivory. All are well illustrated.



Particulars of some remarkable examples of Chinese jade found in the Old Lo-yang tombs in Western Honan, dating from the 5th century B.C., are given in *Ill. London News*, 10 March 1934, by the Bishop of Honan, Rev. W. C. White. They show great technical skill and a bold artistic conception, the designs including striking combinations of interlaced animals. This jade is also notable for its extensive range of colours. Over twenty of the best pieces are illustrated.



The wealth of the discoveries made by the Peabody Museum of Harvard University in the Province of Coclé, Panama, is shown in the description given by E. B. and S. K. Lothrop in *Ill. London News*, 31 March 1934. They include a gold helmet decorated with an Alligator God, jewellery of animal design, and gold breast ornaments. All were found in graves, the objects being packed closely together by the hundred. There is also a large collection of painted ware with an extraordinary variety of design. The Coclé culture is assigned to the period preceding the Spanish Conquest of Central America.



The first International Congress of Anthropological and Ethnological Sciences will be held in London from 30 July to 4 August 1934. It is the outcome of prolonged enquiries undertaken by the Royal Anthropological Institute, to which communications should be addressed at 52 Upper Bedford Place, London, W.C.1.



The Romano-British site at Bloxham (see *ANTIQUITY*, 1932, VI, 359) has yielded further finds which indicate that probably there was

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more than one settlement there, and that it was inhabited from early second century until well into the fourth. A report has been published in *The Bloxhamist* for July 1933.



Mr STUART PIGGOTT writes :—

In my article on the Uffington White Horse (ANTIQUITY 1931, v, 37-46), I suggested that the resemblance between this figure and the horses on the Early Iron Age coins was first noticed towards the end of the last century. I since find, however, that this comparison had been made as early as 1758 by a member of the Stukeley family—not by the famous Doctor himself but by his daughter Anna, then aged 25. She had been staying in Berkshire and had dutifully given her father 'an account of Whitehorse-hill, and the places thereabouts', which he recorded in his diary, and of the Horse itself he writes :—' The figure of the horse on the side of the hill is poorly drawn, though of an immense bulk ; but, she says, very much in the scheme of the British horses on the reverse of their coins '.* Every credit must be given to Anna Stukeley for her acute recognition of this resemblance, which subsequent archaeological research has confirmed.

* *The Family Memoirs of the Rev. Wm. Stukeley, M.D.*, ed. by W. C. Lukis. Surtees Society ; 1880-85, II, 8.

Reviews

CELTIC EARTHWORKS OF SALISBURY PLAIN: based on Air-Photographs. Old Sarum sheet. *Ordnance Survey, Southampton*, 1934. 2s 3d, on paper folded. This map is printed on good strong paper, but may be obtained mounted on linen for 3s, and in sections for 4s.

The archaeological features are printed in red over the modern details in grey, with an admirably clear result. The scale is 1:25000 (approx. $2\frac{1}{2}$ inches to the mile) and the contour intervals are five metres (16.4 ft.), both admirably suited to archaeological requirements, though the English equivalents might advantageously be stated for the benefit of the weaker brethren not accustomed to think in metres.

This is the fifth of the special maps of the Ordnance Survey illustrating definite archaeological and historical periods, and to the Field Archaeologist unquestionably the most useful, for it gives all the features so far revealed by air-photography and verified by survey on the ground. It covers the south-eastern part of the area and is one of six sheets which are to be expected 'at fairly regular intervals' and will complete the whole of the Plain. May we hope that a couple of sheets will eventually be added to the series to cover the Cranborne Chase extension as far as Blandford, which in old maps was included in Salisbury Plain?

The air-photographs are stated not to have been specially taken but to have been those of ordinary routine practice by the Royal Air Force and one wonders if the slighter banks would all show in the long dead grass which has grown up of late years. They are certainly concealed from the observer on the ground. It is probable that if the sheep ever comes into his own again and special photographs can be taken when the young grass is springing even better results would be obtained.

The sheet includes nearly the whole of Colt Hoare's map of his Amesbury Station, South District, and extends beyond it on the east into his 'Salisbury' map. It therefore gives one an opportunity of estimating the destruction which has taken place since 1812, as well as the additions now made possible by observation from the air, for very little that was visible from the ground escaped the eye of that careful observer.

In his Amesbury (South) map Colt Hoare shows 111 tumuli as against 96 in the corresponding area of the present map—not a large decrease—allowing for a group of four on Heale Hill and another of two south of Little Durnford which seem to have disappeared. Both his 'British Villages' are confirmed by the indications of banks—but neither shows any encircling boundary. On the other hand three unknown oval enclosures have been brought to light by the camera, of which one, about 300 yards in its long diameter, round the well known Hand Barrow on the Portway (which yielded a multiple interment with dolichocephalic skulls about 60 years ago), and another about half as big outside the east entrance of Ogbury would be specially interesting to dig.

The lynchets of Celtic fields on the map are very numerous, occurring on the high downs in small groups of ten or a dozen irregularly rectangular enclosures with sides of

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sixty or seventy yards. They are numerous on each side of the 'Old Marlborough Road' an undoubtedly prehistoric road running north from Old Sarum along the highest ground between the Avon and the Bourne. These groups are seldom more than a mile apart and there is no indication of any enclosing ditch round any of them.

By far the most interesting features shown on the map are those old puzzles the Linear Earthworks. There are no single banked ditches of defensive type, all are 'bivallate' ditches, some of them two or three miles long when joined up by air-photography.

A few of these ditches are not shown reaching as far as they did in Colt Hoare's day; one east of Little Durnford has disappeared and one long length is now covered by a plantation. Altogether he shows 3700 yards that do not appear on the present map. On the other hand over 7000 yards of new ditches have been added in his Amesbury (South) area and several important lengths outside it. The importance of these ditches as a problem for the Field Archaeologist may be gathered from the total length now shown—between 26 and 27 miles in an area about nine miles by six—and this is by no means the most crowded part of the Plain.

Two of the principal groups—Lake Bottom and Amesbury Down—as well as all the single pieces, lie amongst Celtic cultivation. The third and largest network in the bombing area round Old Lodge does not appear to do so; the ditches lie around the flint mines of Easton Down and Martin's Clump where no lynchets are shown. (It may be mentioned that this area is closed to the public except on Saturdays and Sundays).

The Director-General in his foreword to the map cautiously refrains from committing himself as to the purpose of these ditches, which Colt Hoare refused to accept as boundaries and considered to be 'covered ways or roads of communication from one British Village to another'. He suggests that they may have been both.

I think however that a study of this series of maps and of the ground itself will solve the problem. It brings out very clearly the following points:—

- (1) None of them suggest boundaries or enclosures of land even if one supposes such things to have existed in Celtic times.
- (2) All of them are ditches either double-banked or on the flat where the banks (or bank) must have been ploughed out.
- (3) Many of them go through or along the side of ancient cultivation.
- (4) Many of them make short sharp turns as if round the corners of fields.
- (5) Many of them give off branches or cross others more or less at right angles.
- (6) Some of the branches are quite short and end 'in the air', sometimes on the edge of a slope.
- (7) Some of the branches fork and continue for a long distance.
- (8) Some of them are now used as roads and are often continued as tracks without ditches or banks. It may be added that though this sheet gives only one rather doubtful example, many on the Plain and elsewhere lead to ponds or streams.

The suggestion that they were cattle-ways banked up to protect the cultivated areas where they passed through them, but unfenced or discontinued where they reached the open feeding grounds, seems to explain all the conditions.

Some of the long ones, *e.g.* the one shown going north through Old Lodge, can be traced for miles either as ditch or track and lead with scarcely a break to important ridgeways and ancient through routes. When this series is completed, and what the map reveals can be studied in the field, I am convinced that this fascinating branch of

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Archaeology will establish a very complete system not only of local cattleways but of long lines of communication dating from the Iron Age.

Users of the ancient Ordnance Maps must all have been struck by the artistic merit of the covers of the present series. The 'Celtic Earthworks' map excels them all in the appropriate art of the design and above all in the charm of the perfect little vignette. 'Atmosphere' and accuracy are all there—from the rugged ploughman with his Gallic 'bracca', to the wooden plough of caschrom type, and above all to the Celtic shorthorn—*Bos Longifrons*—(of the larger variety found on Easton Down) well worthy to have been the sire of all our domesticated cattle. 'V.H.C.' is the least that can be awarded him.

J. P. WILLIAMS-FREEMAN.

THE TECHNIQUE OF EARLY GREEK SCULPTURE. By STANLEY CASSON.
Oxford: Clarendon Press, 1933. pp. XIII, 246, and 96 illustrations. 25s.

Carl Blümel's *Griechische Bildhauerarbeit* (1927) marked a great advance in knowledge of Greek sculptural technique. Now Mr Casson has performed a most useful service in gathering together a mass of observations, for many of which he is himself responsible, upon the methods of technique followed from prehistoric times down to about 475 B.C., in bronze as well as in stone. He thus covers much more ground than Blümel, although he does not carry his studies down to so late a date. Underlying his book is the reflection that medium must control technique, and technique may control style, and he is disposed to look for more continuity between the prehistoric and the historic periods than there is at present evidence to support; it is difficult to decide whether the recurrence of technical methods is to be attributed to the preservation of tradition or to re-discovery. Attempts at chronology based upon technique must always be largely relative, since, while it is certain that the invention of a tool or process supplies a *terminus post quem* for works which betray its use, the converse is not necessarily true: all works which do not expose the use of the invention are not for that reason earlier. For instance, the sculptor of the Vari cave may, as Mr Casson says, 'be considered an old sculptor who . . . had retired to this cave, where he practised his art in the manner of a preceding generation'. But we may imagine that he had several years of active, if old-fashioned, productivity before retirement; and therefore purely technical chronological schemes must be regarded as ideal, although none the worse for that.

Mr Casson shows that in the pre-Hellenic Aegean world the greatest use was made of abrasive stones, particularly the emery of Naxos. Bronze, or copper, tools, unless used in conjunction with emery dust, were too soft for use on hard stones. Soft stones, such as steatite, however, were knife-cut, and surface details might be engraved with metal instruments. The identification of what appear to be gouge marks (and it would have to be a bronze gouge) on the much discussed Fitzwilliam Goddess, to which considerable space is devoted, causes it to be pronounced a definite forgery. For the Lion Gate at Mycenae, and other works (though apparently not at Orchomenos and in the northern part of the Mycenaean world generally) a tubular drill, with emery sand, was used. There is evidence for the use of metal tools set with points of emery, but tools found in excavations have not been sufficiently noticed and preserved.

Of the twilight that followed the fall of Mycenae there is naturally little to be said: Mr Casson has to admit the collapse of all the arts, but not the total disappearance of all traditions: e.g. glaze paint. His hypothesis of the survival of wooden cult-statues into historical times, though attractive and well sustained, seems to me full of doubt. Even Pausanias refused to believe that the Poseidon at Pheneos dated from the time of Odysseus,

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its reputed dedicator. But to my mind the greatest difficulty which his hypothesis involves is that I cannot envisage Minoan-Mycenaean wooden statues, of the kind whose existence Evans inferred from the bronze curls found at Knossos, as resembling such *xoana* as the Apollo of Amyklai.

Mr Casson seems uncertain whether he should give priority to the technique of gem-cutting or to that of wood-carving as the parent of the earliest Hellenic sculpture. At first (p. 45) he tells us that it was 'precisely this familiarity with soft material (such as steatite) which gave the impetus later to the cutting of ivory' at Sparta and elsewhere; then (p. 83) he says that the soft stone *xoana* were carved as if from wood, and that an intermediate stage appears in the very early Spartan bone and ivory *xoanon* figures, probably miniatures of the larger *xoana* of Artemis Orthia: these 'illustrate the process of wood-carving being translated into a much harder material. From ivory-carving it was a logical advance to stone'. The technique of soft stone sculpture (which knew cutting instruments, including the cutting compasses, but made practically no use of abrasives or of the punch) was at first applied to marble; but in Attica a distinctive marble technique was developed, of which the Dipylon head is an early example, and which is observable in a series in the National Museum at Athens, in which abrasives, and, for the hair, the punch play the chief parts. It is a pity that the text of this important section is defiled by confusion: the Dipylon head, described twice, in addition to the note on the plate, as of island marble, in one place becomes of Pentelic; and the same fate befalls Acrop. Mus. no. 589. These *corrigenda* do not affect the argument, but they disturb the reader.

Evidence for primary work of the earliest figures is only inferential. For the full archaic period we are able to rest secure on the assured deductions of Blümel from unfinished statues. His account is amplified by details of the very first stages, at the quarry and in the block. The sculpture of this period is considered geographically; a Naxian-Samian group, exemplified by the Hera of Cheramyes, is shown to have had drapery grooves produced by abrasion; a Peloponnesian group (head of Hera from Olympia, Corfu pediment, Kleobis and Biton) avoids abrasion, and shows a thorough-going use of the punch—the foundation of the classical body-treatment. The Hera is described as of a 'very hard blue limestone which must rank as marble': it is commonly said to be of very *soft* limestone, and so Treu described it. Such points require to be cleared up, and this book will have served its purpose if it draws attention to them. For Attica, sub-groups are necessary, and *kore* no. 679 provides material for a close technical analysis. Mr Casson shows that in such works (mid-6th century) the flat and bull-nosed chisels and the gouge were in full use for their respective purposes, and were used with increasing power in the 'full Chiot' group. He is inclined to place the introduction of the (simple) drill for artistic purposes at about 530–525, and the claw-chisel at perhaps about the same time, though probably nearer 550. In dealing with his 'copyist' group, Mr Casson might have added force to his contentions by stating that no. 683, a notable example, as he says, of this tendency, is of Pentelic marble as well as nos. 671, 676 (Dickins, *Acrop. Mus. Cat.*, no. 683, *fin.*).

The drill was freely used on the *korai* with elaborate drapery, both of island origin and of the 'Attic-Ionic' class, and reaches its fullest use in 'Antenor's' *kore* (no. 681): Mr Casson shows how the drills increased in size. But the use of the drill declined after c. 500, with the decline in popularity of elaborate drapery. On the other hand, a structural use was found for it in the boring of holes preparatory to the formation of a groove, in the manner which Professor Ashmole has described.

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Reliefs receive a chapter to themselves. Mr Casson insists on the difference, both technical and aesthetic, between high and low relief; the latter, he maintains, was always cut in its entirety with a flat chisel. He adds that in fact Blümel's main thesis is perfectly correct if applied only to sculpture in the round; it fails in the matter of relief. But Blümel himself (*Gr. Bildhauerarbeit*, p. 23) observed that while high relief goes with sculpture in the round, the same can only be said with great reservations of low relief, 'whose planes seem at once to crave a flat chisel'. However, he maintained that the use of the flat chisel was much more sparing than one would have at first supposed, and that so far as possible the punch and claw-chisel were used. One of his examples (and he did not deal lengthily with this point) was the same unfinished fragment of the Nereid Monument which Mr Casson adduces as evidence for a departure from the flat chisel technique for low relief in the 4th century.

Part I closes with a chapter on bronze work, which follows Kluge. For inlet eyelashes, the Delphic Charioteer might have been mentioned, as well as a Hellenistic work; he comes within the period with which the book deals, and, as I hinted in a previous review,* is probably one of the earliest examples of this technique, since the lashes are shown on Syracusan coins of the same period.

Part II is an account of the tools used, including reference to literary authorities and to Mr Casson's own experiments: it should establish a much needed nomenclature. Inevitably, it repeats a good deal which has been mentioned in part I; but we could spare two of the three references to the drill with which Odysseus and his men removed the Cyclops's eye! For the date of the introduction of the running drill Mr Casson inclines to Professor Carpenter's view that the Masters of the Nike Balustrade were responsible for it.

The book as a whole is a valuable contribution to the literature of the subject. It suffers from deficiencies of arrangement, and from repetitions; moreover, the author's views sometimes vacillate from one page to another, an index of the need for further study of a subject for which he has provided *prolegomena*. The illustrations, many of which show details of particular works, and are unique, are superb. The Derby Trustees are to be thanked for enabling Mr Casson to give them to us. W. L. CUTTLE.

LONDON MUSEUM CATALOGUES NO. 5: COSTUME. *Lancaster House, St. James's, S.W. 1.*, 1934, *paper covers, 2s, bound, 2s 6d.*

The London Museum catalogues are always welcome. They have a certain quality and distinction, which recommend them to the general reader. They are well produced and illustrated and they never abound in dullness. Above all they never attempt too much, but steer an even course between the very elementary and the highly advanced aspects of their varied subjects.

'Costume', the fifth of this excellent series, follows the tradition of its predecessors, and forms a really important addition to the literature of Dress. As may well be expected, the introduction, by Dr Mortimer Wheeler, is full of charm and sound common sense. It emphasizes the value of costume in the study of history, glances in passing at the evolution of a mode, cleverly illustrating the development of the 'bustle' from 1836 to 1887, through the crinoline of 1858 to 1869, and concludes with a word of warning on the fugitive dyes of the present day, and the difficulty of securing good examples of modern fashions, due to the want of storage space in modern flats. Thenceforth Miss Thalassa

* *Antiquity*, 1933, VII, 498.

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Cruso takes up the tale of men's and women's dress from Elizabethan days till almost the present time, dealing with the subject a century (more or less) at a time, aided by very illuminating line drawings by Miss Marian Laing. Still further to impress her readers with the salient points of her periods she adds a summary of her conclusions to each section, which is direct, simple and shorn of technicalities. There is great virtue in this, for the language of dress can be most irritating and confusing, calling for a glossary if the reader is to keep his, or her, head above water. Here indeed, is costume 'without tears'. Miss Cruso has also a very pithy section on the influences which affect costume; the influence of persons, notably royalty, on certain fashions, such as, for example, the Persian frock, introduced by Charles II, and the direct ancestor of the now obsolete frock-coat. In our own time, the late Empress Eugénie had a distinct influence on feminine fashion. Then again she writes well on the influence of public opinion on dress, and its action in restraining an over-exuberance of mode. Even more important is the way in which an entire fashion is discarded under stress of political emotion, as in the case of post-Revolutionary dress in France. Foreign influences were the offspring of the Grand Tour. Coming nearer to our own times, the influence of the dressmaker looms larger and larger, until it dominates the entire realm of feminine dress, and the very hub of fashion is fixed in Paris. She is quick too to seize the fact that changes in dress are swifter now than heretofore, owing to the mass production by the manufacturer of cheap reproductions which flood the market, and compel the woman to whom dress is a serious subject to seek something new in self-defence, lest she be mistaken for her maid.

The first section on Elizabethan and Stuart dress is excellent; the reader can follow the growth of the bombasted breeches of James I, the peascod doublets, and the standing ruff, to its final stages in Stuart days, when the frozen figures of the early Jacobean period thawed into the graceful and elegant Cavaliers. The stiffened ruff fell into a soft lace collar, the breeches, deprived of their stuffing of rags and horsehair, became easy and full, the padded sleeves in the same way falling comfortably about the arms, and the slashings permitting the fine linen shirt to lounge through elegantly. Such is the general scheme of the book, and it would be unfair to Miss Cruso to summarize her careful work further. One other point of interest is the bibliography. It is commendably short; only essentials are recorded, and she has included 'Punch', which is a mine of information upon the evolution of costume for nearly a hundred years.

The catalogue itself satisfies a long felt want: the description of the magnificent group of Coronation Vestments which occupies the place of honour in the London Museum. Every visitor pauses before this striking case, but when he is armed with this catalogue, the robes will assume a new and extraordinary interest. Here will be found the Full Dress of the Orders of Chivalry, Judges' robes, Civic robes, Uniforms, not only of Military interest, but of little known officials such as the 'Harbinger', an office now extinct, Elder Brothers of Trinity House, Ancient Firemen and Postillions. Nor is the theatre forgotten. There are dresses worn by David Garrick, Samuel Phelps, Grimaldi the Clown, Madame Patti, Sir Henry Irving and Pavlova.

The *minutiae* of dress have their place as well. Hats and bonnets, bewildering in variety, shape, and size; for the hands, gloves, plain and embroidered, some of personal interest like the white kid pair that graced the elegant hand of the 'gorgeous Lady Blessington'; for the feet, boots, shoes and clogs, with pointed toes, or severely square, in leather and velvet and silk brocade, with high heels, low heels or no heels at all, boots for riding and pumps for dancing, and with the stockings ranging from the sixteenth to

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the eighteenth century. Here indeed is a kaleidoscope of dress, and think of the people who have worn these clothes : Charles I, Queen Elizabeth, Henrietta Maria, Queen Victoria, George IV, Thomas Carlyle, Oliver Goldsmith, Sarah Jennings (Duchess of Marlborough), William Pitt (the younger), the Duke of Wellington ; the very names echo the History of England.

A last tribute must be paid to the photographic plates, so skilfully taken with the aid of a mirror, that both back and front of the dress appear in the picture. The idea is beyond all praise and worthy of imitation.

Here is a convenient book at a reasonable price which can be commended to teachers of History ; it will enable their pupils to visualize the past, and dress their historical characters correctly. The teacher who tells the well worn story of Sir Walter Raleigh's cloak has only to turn to plate III to make the picture complete. FRANK STEVENS.

SIGD, LJÅ OG SNIDILL AV DET NORSKE JORDBRUKS OPHAV. By A. W. BRØGGER, F.S.A. Oslo : *Instituttet for Sammenlignende Kulturforskning*, 1933. Series A, vol. XIV. pp. 73, and 18 figures. Price not stated.

This study of 'sickles, scythes and slashers in the dawn of Norwegian agriculture' is, as it describes itself, a 'contribution to the history of the peasant community', and as such is a welcome addition to the increasing list of studies of prehistoric agriculture that are being made in different countries.

The author takes as his text two discoveries in Norway : the one inland at Svenes in Valdres consisting of 30 early bronze spearheads and a bronze sickle—the only one of its kind from Norway—found in a district that was primeval forest ; the other a hunting and trapping station at Ruskenes near Bergen, on the coast, which yielded bones of seal and deer, as well as of ox, sheep and pig, and also pottery bearing impressions of barley. The dating and relation of these two finds to one another are discussed. The main point seems to be that when the knowledge of corn-growing and of cattle-keeping was introduced, the old habits of hunting, trapping and fishing were continued side by side with the new arts, the bones of wild and domestic animals alike being broken for marrow.

A clear outline then follows of the spread of the arts of civilization, including those of corn-growing and cattle-keeping, from the 'Fertile Crescent' to northern Europe, and a picture of agriculture in Scandinavia (chiefly Denmark) during the Neolithic and Bronze Ages. Thus barley is recognized earlier than wheat, millet appears in the Early Bronze Age, and rye and oats in the Early Iron Age. Ox and sheep were the earliest domestic animals, followed later by pig and poultry ; horse does not appear till the Bronze Age, but dog is not mentioned, which is strange, seeing that it appears in British neolithic sites fairly commonly. In Denmark grain was stored in large jars, and roasted bread has been found in Swiss pile-dwellings. But grain was not used for cereal foods only. The author contends that what wine was to southern Europe, mead (or beer) was to the north. In 1929 a Danish grave in an oak cist yielded a birch-bark bucket containing a drink for the dead made from wheat, cranberry, bog-myrtle and honey. Another example from the isle of Lolland, 2000 years later in date, was of similar composition except that barley took the place of wheat.

Ploughs drawn by two oxen are depicted on Swedish rock-engravings at Bohuslän, and a very similar plough of uncertain date was found in a peat-bog at Døstrup in Jutland. 'The plough is the father of the rectangular field', but so far no ancient fields have been

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identified in Norway. The famous hafted flint sickle from Stenild in Jutland is well illustrated and described.

But it is the relation between corn and cattle that interests the author most of all, and this is reflected in that between a sickle and a scythe. Except in those parts which are blessed with a specially favourable climate artificial feeding of cattle is necessary in winter, and this must consist of either hay or leaf-fodder, for the cutting of which scythes and 'slashers' have been identified in Iron Age finds. No Bronze Age scythes, however, have been found. Could the Stenild flint sickle have been used as a scythe equally well as a sickle? On the other hand, was the climate such that artificial foddering in winter could be dispensed with?

In the sub-boreal climate of Bronze Age times natural winter feeding of cattle was possible only in western Norway. Climate and geographical conditions thus divided the country into east and west culture-provinces. In the west there existed a mixture of hunting and fishing with semi-nomadic agriculture and seasonal migration of dwellings, while cattle could probably find natural pasture even in winter. In the east artificial fodder had to be found, and as possibilities of hunting and fishing were fewer, corn was likely to become of relatively greater importance. In this connexion it is significant to observe that the beautiful crescentic flint blades, which the author rightly regards as sickles rather than saws, are a feature of the east rather than of the west, and correspond in distribution with the rock-engravings. It is from this district that megaliths and pottery are largely absent.

In arguing that the crescentic flints were sickles the author might well have referred to the very obvious gloss that appears on many specimens and which is well seen in the excellent photographs he provides. Such gloss results from friction with the silica-containing stalks of corn or grass (see *ANTIQUITY*, 1930, IV, 184-6).

The coming of iron facilitated the clearing of forests and encouraged the building of wooden houses and boats. This led to a valley-ward movement and a distribution of population similar to the present. At the same time the change to a subatlantic climate with wetter and milder winters favoured the pasture-lands of the west, though the effect on the east is more difficult to gauge. Rye, which is a characteristic central European grain, now appears in Scandinavia, though the first evidence of it in Norway only dates from the migration period. Similarly oats, which appear in Denmark at the end of the Bronze Age, are not found in Norway before the Roman era. Barley, however, remained the principal grain, and wheat was common. The popularity of oats was due, no doubt, to its ability to stand the wet sea-winds better than barley, and its appearance in the north was perhaps partly due to the climate becoming wetter. In later times oat-straw was valued for fodder, while barley was largely reserved for beer. This may have been the case in the Iron Age also.

Coming to the consideration of agricultural implements, sickles, scythes and bills (or slashers) are singled out for special study. The main contention is that sickles were used not only for corn-cutting but also for gathering winter-fodder for cattle, whether hay or leaves, and that therefore they are evidence of cattle-keeping just as much as of corn-growing. It was not till the Iron Age that it became possible for implements more suited for these several uses to be developed, and hence arose the scythe and the bill (or slasher).

The iron scythe is practically confined to grazing countries, where winter-foddering was necessary, such as Switzerland, Norway, Sweden, Finland and eastern Europe. The bill or slasher, a curved knife with concave edge and a hooked point, mounted on a

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straight handle in line with the blade, is confined to Norway and Sweden, where it is called *lauvkniv*, or leafing-knife. The old Norwegian name was *snidill* (cf. Germ. *schneiden*, to cut). Gathering leaf-fodder is still practised in parts of Norway, and the author considers that at one time it may have been even more important than hay. The etymology of *sigd* (sickle) is studied, the conclusion being that the word goes back at least to the pre-Roman Iron Age. The *ljå*, or scythe, was invented elsewhere, but developed in Norway. Examples dating from Viking times are illustrated, and it is interesting to note that they differ in no important respect from the little one-handed scythes which are still in general use in the fjord districts for cutting hay. The blade, which is about $1\frac{1}{2}$ feet long, and is made of soft iron, is fixed at right angles to a nearly straight handle, $2\frac{1}{2}$ feet long. The present reviewer always uses one to cut the grass before excavation, and it is noteworthy that the type has recently been introduced into England unaltered except that it is made of steel. May it not be that *ljå* is cognate with Greek *λαῖον* (or *λήϊον*), standing corn? The importance of the scythe in old time was reflected in the number of metaphors into which the word *ljå* entered, and itself was due to the fact that the wealth of the people consisted almost entirely in cattle for the feeding of which the scythe was needed.

The spread of iron culture to Norway is attributed to the spread of the Celts in pre-Roman times. Reference is made to the great variety of iron-work, including scythes and sickles, at such sites as La Tène in western Switzerland, and an outline is given of the principal features of Roman agriculture in south Europe. This leads to a discussion of the relations between Scandinavia on the one hand, and the Celts and Romans on the other, in regard to cultural influence, and it is recognized that it is only by investigating the field-systems that such influences can best be studied. Several pages are devoted to an outline of our English researches on this subject, which the author considers to be of special importance. He emphasizes the distinctions that have been drawn between the 'Celtic' square-field system, the Teutonic strip-system, and the little irregular plots associated with the Neolithic and Early Bronze Age settlements of our western moors. Unfortunately no datable ancient fields have yet been identified in Norway; on the other hand there has survived down to the present day in many parts of Norway an old system of cultivating tiny plots of land reminiscent of the English primitive plots of Dartmoor, and which the author conceives may be an inheritance from the Norwegian neolithic period. These plots, called *reiter*, some of which are so small that it is picturesquely said that one could spit across them, were not ploughed but were simply dug with a spade or even rooted with a stick, and are an instance of the extraordinary conservatism of agriculture. Though it is not explicitly stated, one may infer from the description that it is corn that is grown on these *reiter*, and not vegetables as in our allotment gardens.

There follows an account of Professor Gudmund Hatt's excavations of houses and fields of the pre-Roman Iron Age in Denmark, with the very striking picture of farm-life there revealed. Here, not only did the cow-byre form part of the rectangular dwelling-house, as is still the case in certain of the western isles of Scotland, but corn was stored in large jars, and it has been shown that the wheat was roasted before being ground. (This, we understand, is still the practice in parts of Central Asia). The Danish fields are of Celtic type, and the question is raised as to their relation with the British examples.

The problem dealt with is that of the origin of Norwegian agriculture and the evolution of the farm down to Viking times. The whole study is well illustrated and is a welcome contribution to the literature of early agriculture. E. CECIL CURWEN.

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WHEAT IN GREAT BRITAIN. By JOHN PERCIVAL, M.A., SC.D.Cantab. *Published by the Author, Leighton, Shinfield, Reading, 1934. pp. 125, and 63 figs. 10s 6d (11s post free).*

Primarily intended for farmers and agriculturalists this book is also of considerable interest for archaeologists. Of late years attention has been paid to the still only partly solved problem of the origin of the cultivated cereals, the final solution of which, if it ever comes, will depend on the collection and careful examination of as many samples as possible of ancient grain, preserved by carbonization, and discovered during excavations all over the relevant parts of the world.

Though not professing to do so, the author makes a contribution to this problem by classifying botanically the fifty or so varieties of wheat found in this country at the present day. He also summarizes the discoveries of prehistoric wheat in Britain up to date. There are technical difficulties in the diagnosis of the varieties of wheat when it is carbonized, but it is to be hoped that Professor Percival's research work in this direction, aided by field archaeologists who discover grain in their excavations, will ultimately overcome these, and establish the main outline of the early history of our cereals.

On the subject of bread and the cereals that have in the past been used in the making of it, and also on the subjects of climate, cultivation, sowing and the yield of grain per acre, much of interest is forthcoming from early records and modern experiments, throwing light on what one may reasonably consider to have been some of the conditions of prehistoric agriculture.

The 63 photographs of ancient carbonized wheats and modern varieties are a particularly pleasing feature of the book. Archaeologists should encourage this work by purchasing copies.
E. CECIL CURWEN.

THE LIBRARY OF A. CHESTER BEATTY. Description of a hieratic papyrus with a mythological story, love-songs and other miscellaneous texts. By ALAN H. GARDINER, F.B.A. *Privately printed by John Johnson at the Oxford University Press and published by Emery Walker, Ltd., London, 1931. pp. 45, 31 plates in monochrome and 30 in line. Folio.* 30s.*

The papyrus here published for the first time, and most conveniently referred to as [The] Chester Beatty [Papyri, no.] 1, is the outstanding ms. in a group acquired by Mr Beatty, which forms the most valuable addition to Ancient Egyptian literature in recent years. The other papyri in the group were presented by Mr and Mrs Beatty to the British Museum, and are being edited by Dr Gardiner for the Trustees.

The mythological story which occupies the first sixteen pages of the recto of Chester Beatty 1 would by itself justify the editor's claim that this is the most important of a remarkable series of new documents. Though related in its boisterous tone and lack of fine writing to some of the earlier Egyptian folk-tales, it is unique in the literature of the country in that it is a tale, happily complete, entirely confined to the actions of the Gods and yet with no religious intention of any sort. It is pure story telling with Olympus as the stage. This is not to say that it is not full of instruction on a number of points of which we have hints from other, fragmentary and often corrupt, Egyptian texts and from classical writers; besides presenting us for the first time with a full account of one of the most familiar themes of Egyptian mythology, 'The Contendings of Horus and Seth', which is the title Gardiner gives to the story.

* We apologize for the long delay in publishing this review, for which we are not responsible.—ED.

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The story, without any help from its style, which is bald and jerky, holds its own by a craftsmanship in construction and even more by the sheer fun of its telling. But though it will receive a unique position in the opinion of students of Egyptian, it will hardly rival Macaulay's ideal for his History, still less attain the nursery popularity of Sinbad, since the plot may be said to turn on an incident whose impropriety drags from the editor an accusation of 'lubricity' in the author. (If this were a modern writer the accusation would be just enough; an anthropological view would suggest that what is displayed is rather a coarse but very lively humour in the story-teller and his audience).

Humour is in fact the key-note to the whole piece. And though one is frequently impressed with the aptness of Gardiner's comparison with the Homeric stories of the Gods of Olympus, the satire here is too broad for Epic (which of course this is not), while the occasional apparent confusion of thought is inconsistent with the general lucidity of the plot and the directness of the narrative. Confusion is there—for the modern reader; but the ancient audiences would hardly have tolerated it so, and this is admittedly a singularly incorrupt text. It is difficult to escape the conviction that in the curious disintegration of the person of the sun-god into separate forms, sometimes even opposed one to the other, is to be found the point of a political satire draped around familiar fragments of mythology.

The three groups of lovesongs—the largest complete 'book' of seven stanzas—which are found on the recto and verso of the papyrus are only a little less exciting in their literary interest than the 'Contentings'. Together they amount to almost as much as is to be found in all our other MSS of this type; they are much less corrupt, and practically complete in themselves and consequently easier to translate than the examples that have long been known.

The comparison here, though I cannot find that Gardiner makes it, is with the Song of Songs; not a comparison of detail, but of general feeling as Peet (who had access to the texts before publication) pointed out in his Schweich lectures. But the catalogue of the beauty of the Beloved in the first stanza of the main collection of songs, is the first in a long succession of its type which passed through Spenser in almost the same form and was sublimated in *Love in the valley*. But, as we should expect, the soundest parallel is from the East, and one is recalled above all to the songs interspersed through the *Alf Leilah*.

Two short literary pieces—one an Encomium of Rameses v—and a few fragments of business documents complete the contents of the papyrus. The publication is handsome as befits the importance of the document. All the texts are reproduced in excellent colotype with Dr Gardiner's hieroglyphic transcription on the opposite page. Of the translations, it need only be said that it is unlikely that any other scholar living today could have made so much of a first edition; and while there is no grammatical commentary, very adequate footnotes make the text more intelligible to the non-Egyptological reader, besides supplying the student with much valuable information. All must be grateful to Mr Chester Beatty. S.R.K.G.

EXCAVATIONS AT MINTURNAE. Vol. II, Inscriptions, part I, Republican *magistri*, with an appendix of classical references to the site. By JOTHAM JOHNSON. Rome: International Mediterranean Research Association; Philadelphia: University of Pennsylvania Press, 1933.

This volume is the first published of a series which will describe the site of Minturnae, the sea-port town on the deeply flowing Liris, and the scene of excavations by the

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International Association for Mediterranean Research. Minturnae, as classical authors make clear, was not an exceptionally important place in antiquity; its life and status were matched by not a few other towns on the Italian coast. It is, indeed, precisely this representative character which gives the site importance to students now, for most of the neighbouring towns (Terracina, Formiae, Fondi and Sinuessa), are overlaid by their modern successors, Minturnae being deserted for a hill-top site. Thus, the whole town, growing out of an Auruncan walled settlement into an early Roman colony later reinforced by Caesar, is open to the excavator. Its town-plan will illuminate the history of Roman colonial development, while its stratified levels, related to the classical references here collected, ought to yield deposits capable of giving to students of ceramics and minor objects just those chronological norms which are urgently needed to make their studies of service to the historian. This is the type of study which Minturnae positively imposes upon the student, because impressive architectural remains have not survived. Thus, those conversant with the application of these means to the recovery of history incline to look upon Minturnae as a picklock which will open a whole series of doors at present so fast closed as hardly to be visible.

Those who endorse this way of looking at the matter will especially welcome the list of classical quotations, as forming the framework upon which an interpretation of the remains will eventually be carried. It is almost complete, the *desiderata* being the picture of the place from the *agrimensores*, which will no doubt appear in the later topographical study, and the coasting lists preserved in the Ravenna Cosmography (IV, 32; V, 2) and Guido (34; 75). But the main theme of this volume is the facet of the town's history presented by twenty-nine manumission-records, stone altars later trimmed down and worked into the *podium* of an Imperial temple, after being burnt in a great fire. One of the stones is dated to 65 B.C.; others are more, some less, archaic in style. None can be later than the suppression of the *collegia* by Julius Caesar, if they really continue after the temporary suppression of 64-56 B.C.

The stones are important as giving information about both slaves and masters. It may be fairly assumed that the list of masters is a fairly representative and therefore reliable index of the composition of an old-established Roman colony at the critical period following the Social War. It is an interesting list: Roman families number 60 per cent., Italians 38 per cent. and Greeks 2 per cent. It was the Tiber which had flowed into the Liris; and this must represent the effect of the Roman colony, which was large in proportion to the primitive settlement. On the other hand, it is doubtful how many of the Italian names are Auruncan. The case for a survival of Auruncan folk does not depend upon the survival of their fortification after the massacre of 314 B.C., as Mr Johnson appears to think. Too little is known as to how that fortification was used by the victors. Until the Roman colony was founded, in 295, the little place may well have served as the conquerors' fort. Still less can we guess (on the evidence before us) how the Dipolis was constituted, and what the conservation of the original *enceinte* really meant to the new town. Thus, the chief service of the list is less to tell us, at two centuries' interval, how the original town was constituted, than to emphasize how essentially Italian the population of the late-Republican town remained. The slaves however, tell a very different story, whatever its true implications. To take the extremes out of the 312 souls, three are Celtic, one African, 48 are Italian and 205 Greek. This is the result of taking the names at face-value, and, as Mr Johnson points out, it raises in acute form the principles of naming slaves, the chief difficulty being the quantity of Greek names and the absence of Celtic ones. On this matter, two points are made. It

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may be that the non-Greek nationalities belonged to other bodies of which the records have perished. On the other hand, Greek names must in some cases disguise non-Greek folk. At all events, the list flies in the face of history, which vouches for large numbers of Celts in Italy about then. But this fact only raises yet another question, namely, what kind of slave was most likely to win manumission. It is clear that those employed upon heavy work, in field, wood or mine, were much less likely to win freedom than those in commercial or domestic labour. This last point is not made in considering the matter, but it will doubtless be borne in mind by those who make some final use of this valuable material, which Mr Johnson has been anxious to put at the disposal of others rather than study exhaustively himself.

I. A. RICHMOND.

A ROMAN VILLA AT LANGTON, NEAR MALTON, E. YORKSHIRE. *By P. CORDER, and JOHN L. KIRK. Printed for the Yorkshire Archaeological Society by the Oxford University Press, 1932. pp. 99, with 30 photographs and 28 figures. 15s 6d post free.*

In this the 4th report of the 'Roman Malton and District' series, the authors describe the excavation of a civil settlement at Langton, 3 miles southeast of Malton. The earliest occupation of the site was a military one, consisting of a small fort nearly a third of an acre in size—provisionally dated to the period of the earliest occupation of Malton, and probably a small outpost connected with the latter. It may be that some form of occupation lingered on, on a small scale till early in the 2nd century, but it was not till the beginning of the 3rd century that the civil occupation was at all intensive. The main north and south ditches surrounding the settlement probably belong to this period, and there are fragmentary remains of quite extensive buildings. In one of these was a small but compact bath-house which probably continued in use when house I in the western half of the area was constructed. This latter was a small dwelling house of the simplest type and was succeeded by a small corridor house at the beginning of the 4th century.

Then came the period of greatest expansion of the settlement, which was actively engaged in wheat production. A store house, threshing floor, drying furnace, and circular mill testify to the production of corn in some quantity and enlargements of the dwelling house mark the prosperity of the settlement. In the late 4th century there was intensive occupation, indicated by the coins and pottery.

The authors note that in the site are reflected the successive occupations of the fort at Malton. Of the period of the early camp there, there is at Langton the small military post. The Severan reoccupation of Malton (which would probably mean an increasing demand for corn) is marked by the first extensive settlement and house I, while house II and its numerous out-buildings reflects a steady demand for supplies of wheat in the middle of the 4th century. The occupation continued after the troubles of A.D. 367-9 and shows that, almost to the end of the century, the Signal Station System provided an efficient safeguard for settled civil life.

The photographs at the end of the book were mostly taken by Dr Kirk while Mr Corder is responsible for the notes on the pottery and plans. The book is well produced and continues the standard of the earlier reports of this series.

K. ST. JOSEPH.

QUATERNARY GLACIATIONS AND PLUVIAL LAKES IN BRITISH EAST AFRICA. *By ERIK NILSSON. Stockholm, 1932. pp. 101. Price not stated.*

With that feeling for the strategic point in a discussion which they have often shown Swedish scientists have directed their attention to Pleistocene and post-Pleistocene

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conditions in East Africa. Information about changes of climate that have taken place near the equator is very necessary if we are to solve some of the broader problems of the Ice Age. In 1926 Professor Percy Quensel found morainic material on Mt. Elgon and observed lacustrine sediments in the Nakuru-Naivasha basin. Consequently the Quaternary geology of the region was made the main object for investigation by an expedition, which was supported financially by the Swedish Africa Fund.

The outlines of the investigation were drawn by Professor Gerard de Geer. In the field Dr Nilsson received much help from the Swedish Biological Station on Mt. Elgon, and he acknowledges the value of his contacts with Mr E. J. Wayland and Dr L. S. B. Leakey. During the preparation of his report he received advice and suggestions from Professor Lennart von Post. The thesis under review was accepted for the degree of Doctor of Philosophy in Stockholm.

Traces of ancient glaciation were studied in most detail on Mt. Elgon, but attention was also paid to the other high mountains of the region. Shore lines and sediments were investigated in the Nakuru-Naivasha and Baringo-Hannington basins. The object of the work was to gather evidence of climatic change. Dr Nilsson describes the moraines on Ruwenzori, Mt. Elgon, Mt. Kenya, and Kilimanjaro, and refers to previous work done by others. On Mt. Kenya the oldest moraine represents a very extensive glaciation which is called *The Great Glaciation*. Very little of this moraine is left and it is much more weathered than the next oldest. The *Last Glaciation* had three great maxima which are marked by well developed moraines. There are also four or five other moraines higher up the mountain which indicate post-glacial stadia. The two main glaciations were separated by a very long, dry inter-glacial period. All the moraines examined on Kilimanjaro are ascribed to the Last Glaciation on the ground of their state of preservation. 'When the glaciers melted away from their maximum position (3600-3800m.) they readvanced or paused twice (4100 and 4150m.), while the ice-covering still had a considerable extent. Then there appears a long uninterrupted period of melting. It is not until we come to an altitude of 4650-4750m. that we notice three small oscillations or interruptions of the glaciers and a little further up there are another two at 5000m. and 5120m. In quite recent times at least one push forward has been made by the glaciers'. The author quotes Klutes' opinions that the complete analogy as regards the altitudes of the present and the ancient glaciers on Kilimanjaro must be due to similar conditions of precipitation with the same alternation between northeast and southwest monsoons. This, he says, implies that there has been no shifting of the equator or the poles. The close parallelism of the two snow-lines along the mountain chains of North and South America also 'gives support to the assumption that the Pleistocene glaciations were contemporaneous over the whole earth'. (85)

Epochs of colder and moister climates would have comparable effects on glaciers and lakes with no out-flow. Dr Nilsson levelled and mapped a series of wave-cut terraces, barriers, and deltaic deposits. This was not an easy task because they have in many places been hidden beneath later deposits or removed by erosion; moreover tilting has occurred in more than one direction. In the Naivasha basin he recognizes ancient shore-lines of lake I at 2029-2010m., of lake II at 1990-1947m., of lake III at 1982-1947m., of lake IV at 1959-1938m., of lake V at 1935-1928m., and of lake VI at 1917m. The present surface of Lake Naivasha appears to be about 1908m. above sea-level. In the Nakuru-Naivasha basin, and at higher levels than that of lake I, occur the Kamasian sediments, which have yielded lower palaeolithic implements. They are much faulted and appear to have been deposited by one or probably by several lakes. Further investigation

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may prove that they indicate several pluvial periods. Subsequently to the existence of lake II, two arid periods seem to have occurred, during which Lake Nakuru, which is now only 2.8m. deep, must have dried up. Dr Nilsson correlates the Kamasian lake or lakes with his Great Glaciation and his lakes I, II and III with the three phases of his Last Glaciation. Then followed a series of post-glacial, or post-pluvial, changes represented by the younger moraines and the lower members of his old lake-levels.

In chapter v the author compares the Quaternary changes of climate in East Africa with those in other parts of the world, and he gives a table (p. 90) offering a correlation of his results with those obtained by British workers in the Nile Valley and Fayum. He equates the Kamasian lake (or lakes) with the 46m. terrace; these were followed in both regions by an arid epoch. Lakes I, II and III are regarded as equivalent to the 35m., 28m. and 22m. lakes in the Fayum. A sub-arid period then intervenes in both regions. Lake IV, followed by a sub-arid epoch and a retreat of glaciers in Kenya, is equated with the 18m. lake of the Fayum, and lakes V and VI with the 10m. and 4m. lakes. He mentions that Dr Leakey considers his Gamblian, which corresponds with the author's lake I, to be of Mousterian age; and that the 35m. beach in the Fayum also contains Mousterian implements.

Dr Nilsson has made a very valuable contribution to our knowledge. His thesis is illustrated by nearly seventy photographs, maps and sections; and at the end of the book are three folding maps of Mt. Elgon, on a scale of 1:50000, showing the topography of the mountain and the maximum extent of its glaciers. There is also a folding plate with panoramic photographs of Elgon and Kilimanjaro. Anthropologists and geologists will await with much interest the publication of the results of Dr Nilsson's still more recent work in Abyssinia.

R. U. SAYCE.

LAS GLACIACIONES CUATERNARIAS EN LA PATAGONIA Y TIERRA DEL FUEGO (with an English summary). *Por* CARL C:ZON CALDENIUS. *Stockholm*, 1932. pp. 164.

This is another piece of work due to the inspiration of Professor Gerard de Geer. As the result of his suggestion that a geochronological investigation of the ice-lake sediments of Patagonia should be made, the director of the Argentine Geological Survey entrusted the work to the author and extended its scope to include the whole of the Quaternary geology. The main object was to obtain information which might make possible a comparison of the courses of glaciation in the northern and southern hemisphere. The present report is copiously illustrated with over a hundred good photographs, sections, diagrams, and maps—some in colour. At the end is a folding coloured map on the scale of 1:2500000 showing the Quaternary terminal moraines and the Fini-glacial ice-dammed lakes of Patagonia and Tierra del Fuego.

Dr Caldenius recognizes four distinct systems of moraines which are situated mainly at or near the mouths of the Cordilleran valleys; they generally lie close within one another. Further up the valleys there are other systems of moraines, and there is one near the present glaciers. Erosion has been exceedingly active, and from some of the valleys the Quaternary deposits have been almost entirely removed. The oldest system of moraines has been so eroded and, in places, buried beneath later deposits that it is not certain whether it is a single system; the author thinks that it may prove to consist of at least two systems. The topography of the third and fourth systems is often extremely fresh. Ice-lake sediments, which are older than the third moraine-system, can be

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traced far up the valleys ; they therefore indicate a period when the ice had receded perhaps to its present position before it advanced again to build the third system of moraines.

The author does not rush at a correlation of his four groups of moraines with the four main phases in the Alps. Judging from the position of the third and fourth systems, their relation to the large Andine lakes, and the freshness of their topography, he is inclined to compare them with the outer and inner Würm moraines. The fifth system, much higher up the valleys, may correspond with the Bühl moraines. Later in the paper (p. 156) he correlates the fourth Patagonian moraine system, on evidence from clay varves, with the Middle Swedish (Fini-glacial) moraines, and the third Patagonian system with the Goti-glacial moraines of Sweden.

Records of two important sections of varve-clays, the one at Rio Corintos, the other at Laguna Blanca, and situated respectively inside and outside the fourth system of moraines, have been submitted to Professor de Geer, who finds a good correspondence between the varve-pattern of Rio Corintos and that of Sweden belonging to the period between Goti-glacial and Fini-glacial times. The Laguna Blanca varves are attributed to the later part of the Goti-glacial phase. Dr Caldenius concludes that the glaciations of both hemispheres were co-eval ; and he equates his third system of moraines in Patagonia with the Goti-glacial moraines of Sweden and his fourth with the Fini-glacial. It appears that the great ice-sheet in Scandinavia retreated from the Fini-glacial moraines two hundred years later than the much smaller valley glaciers of the Rio Corintos valley retreated from the corresponding moraines.

R. U. SAYCE.

MEMOIR OF THE ARCHAEOLOGICAL SURVEY OF INDIA, No. 37. An Archaeological Tour in Waziristan and Northern Baluchistan. By SIR AUREL STEIN. *Calcutta*, 1929.

In this volume, Sir Aurel Stein summarizes the results of his exploration in Waziristan and Northern Baluchistan. Owing to the turbulence of the frontier tribes, the area is little known, in spite of its historical importance. Lying between two great centres of ancient civilization, the Indus Valley and Southern Persia, it was highly desirable that it should be surveyed as soon as possible. As the result of Sir Aurel's travels, the known extent of the Indus Valley civilization has been greatly increased, and a large collection of pottery fragments are now available for comparative purposes. In discussing his journey from the Tochi to the Gumal, Sir Aurel draws an interesting parallel between the organization of this important sector of the frontier and the early Limes of the Roman Empire. These were military roads, usually following the main valleys, and far advanced beyond the actual administrative border, which it was their function to guard. The modern military roads, constructed after the Waziristan campaign, are conceived and executed very exactly after the ancient pattern. This must be acknowledged as one of the best Memoirs of the Archaeological Survey.

GREEK SCULPTURE AND PAINTING to the end of the Hellenistic Period. By J. D. BEAZLEY and BERNARD ASHMOLE. *Cambridge : University Press*, 1932. pp. xviii, 107, with 248 illustrations. 10s 6d.

By gathering in one low-priced book of convenient size the portions of volumes iv, v, vi and viii of the *Cambridge Ancient History* which deal with Greek sculpture and painting, together with the appropriate illustrations, the Cambridge University Press

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has produced incomparably the best short account of the subject in the language. Those who read these chapters originally will need no recommendation; they will be glad to possess them in a less cumbersome and scattered form. Others should now have no excuse for not making their acquaintance. Professor Beazley's phrases seem often to have the inevitability of perfection; to quote from them would suggest that his felicity needs searching out, and would deprive the reader of some of the pleasure of discovery. Professor Ashmole, who is responsible for the last six of the nineteen sections, has a pleasing and characteristic manner. The text remains untouched, except for a few immaterial omissions and for revisions which bring it up to date: thus Mr Payne's work is reflected in the treatment of Proto-Corinthian pottery, and the latest yields of the sea—the Artemisium Zeus and the Marathon boy—are included, as well as the New York kouros which has recently received much attention. The spelling of Greek names has been de-Latinized (with lapses in Professor Beazley's last section), and kouros and kore receive their enfranchisement, unbranded by inverted commas, italics or capitals. The illustrations are more generally successful than in *C.A.H.*: some new ones appear, both of recently discovered works and of new aspects of old ones. A number of the *C.A.H.* illustrations have been dispensed with, but the work of selection has been admirably carried out. The Dipylon head—poorly illustrated in *C.A.H.*—is omitted; instead we have the New York kouros, attributed to the same hand. The marginal references to the pictures are very convenient, and there are footnotes showing where pictures of objects not here illustrated may be found; notably to *Kunstgeschichte in Bildern*, that most useful collection. There is a bibliography and a table of illustrations.

W. L. CUTTLE.

THE ARCHAEOLOGY OF YORKSHIRE. By FRANK and HARRIET WRAGGE ELGEE. Methuen, 1933. pp. 264, with 2 maps, 60 illustrations. 10s 6d.

Dr Frank Elgee had already placed archaeologists under a debt of gratitude by his masterly study of *Early Man in North East Yorkshire*, and now increases this debt in presenting the present volume, one of outstanding merit in the series of County Archaeologies issued under the editorship of Mr T. D. Kendrick.

In its production Dr Elgee has been ably assisted by his Wife and under their joint authorship the book has gained much in human interest and general appeal by their judicious weaving of threads of early folk-lore into the archaeological fabric.

To compress a lucid and comprehensive account of the archaeology of Yorkshire within the limits of one volume of this size is no easy task. The authors were faced with an embarrassment of riches, for not only is Yorkshire the largest county, but within its borders it embraces abundant evidence of every phase of early civilization since the end of Palaeolithic times, when the uplands were freed from ice and the latest Palaeolithic hunters moved northwards and left meagre traces of their presence on the summits of the Pennine and Cleveland Hills. Tardenoisian immigrants from the Lincoln Ridge and Belgium followed, and settled extensively upon the high moors of south and west Yorkshire, where they mingled with the remnants of the Palaeolithic stock and developed a distinctive culture. In isolated areas of the wild eastern moorlands a degenerate form of this culture appears to have survived amongst scattered communities until the Bronze Age, thereby increasing the complexity of the archaeological problem.

The next well marked phase is the appearance of the long-barrow folk who, pushing northwards along the ridges of Lincolnshire, and the Magnesian hills of south Yorkshire,

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settled upon the limestone hills and moorlands of east Yorkshire, where 25 long barrows are recorded by the Elgees. In their account of these, they establish the true character of the Yorkshire long-barrows as a degenerate form of the chambered long-barrow of southwest England, and refute the prevailing misconceptions that they are merely two or more round-barrows joined together, or a local development of the round-barrow culture.

The Neolithic population was sparse and scattered, and not until the arrival of the Beaker folk were the Wolds extensively occupied. Crossing the North Sea from the Rhineland the invaders entered Yorkshire by the Humber estuary and sheltered inlets of the coast, and displaced, or absorbed, the long-barrow folk on the Wolds. Bolder pioneers pushed westwards to the Pennines and penetrated to the Aire Gap and beyond. Later, successive waves of immigrants introduced the Middle and Late Bronze Age civilizations, and the authors graphically describe how the uplands of east and northeast Yorkshire ultimately became one of the richest and most densely populated areas of Bronze Age Britain, connected by well defined trade routes with the Ribble and Mersey estuaries of the west coast.

Probably as early as 500 B.C. the first Celtic immigrants reached Yorkshire and established themselves on Castle Hill, Scarborough, where Hallstatt remains have been found, but it was not until the later, La Tène, phase of the Iron Age that iron displaced bronze in Yorkshire. The authors indicate how during the third century B.C. Gaulish charioteers overran east Yorkshire and established themselves upon the Wolds and gradually extended their territory over the whole of east and west Yorkshire but, for some reason, shunned the northeast moorlands which continued as a cultural backwater of Bronze Age culture. This was the fourth invasion of Yorkshire since the coming of long-barrow man, each entailing an overlap of civilizations. Dr and Mrs Elgee have, by careful research, disentangled these events and their impacts in a most convincing manner and present in the first eight chapters of the book a concise account, in well-ordered sequence, of Yorkshire's prehistory, documented by an abundance of records of typical objects, sites and monuments.

Notwithstanding the number of finds referred to, the book in no portion degenerates into a mere archaeological catalogue. Interest is maintained in a manner which will appeal to the general reader as much as to the student; though a more liberal use of footnotes in regard to the most important objects would have increased its value to the latter. The chapters on Roman Yorkshire, Anglian Yorkshire and the Viking Age call for special commendation as vivid representations of a sequence of facts set out in a manner not previously available.

The story of the Romanization of Yorkshire and the rise and importance of York and Aldborough as military centres, is graphically told and supported by a wealth of archaeological evidence carefully analyzed. Incidentally, it is suggested that the numerous hill-forts of Yorkshire, about which so little is known by actual excavation, are probably of Brigantian origin, constructed to oppose the progress of the all conquering Roman.

No less illuminating is the record of the Anglian and Viking invasions. The richness of the pagan objects from cemeteries and the numerous sculptured crosses and monastic ruins of these periods, as testified by the illustrations and references, indicate how completely Yorkshire was dominated by each in turn. So thorough was the Viking invasion, about the middle of the ninth century, that, as the authors point out, not satisfied with mere plunder they colonized the whole country, and Viking land divisions,

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Viking courts and Viking social organizations superseded those of the Angles, and still remain the fabric of the county divisions, its wapentakes and hundreds.

The book, of absorbing interest, closes with a survey of the Yorkshire earthworks of unknown age, amongst which the Scamridge Dikes are most notable. Various opinions have been held with regard to the origin and purpose of these. Greenwell assumed they were prehistoric tribal barriers; Mortimer, that they were covered ways of escape for the inhabitants of Troutsdale; Colonel Kitson Clark, roads gradually deepened by wear; General Pitt-Rivers, that they were the work of invaders advancing from Flamborough Head. Dr and Mrs Elgee discard all these theories and advance the suggestion that as the system of dikes form horn-shaped enclosures they are 'horngarths' for hunting purposes, into which wild animals were driven and slaughtered as they crowded towards the narrow ends. Strong evidence is advanced in support of this theory, notably that the dikes are situated in the royal forest of Pickering and form the centre of a well-defined system of earthworks within its boundaries. With regard to their antiquity, we are reminded that the dikes gave the name to the Wapentake of Dic, mentioned in Domesday, and must therefore have existed prior to 1086, and in the opinion of the authors they are probably of Anglian origin.

The volume includes a detailed archaeological gazetteer and a list of museums possessing Yorkshire antiquities. The authors are to be congratulated on having produced, in such a readable and concise form, the first record of Yorkshire archaeology treated as a whole.

A. LESLIE ARMSTRONG.

LA TRÉPANATION CRANIENNE CHEZ LES NÉOLITHIQUES ET CHEZ LES PRIMITIFS MODERNES. By DR ÉMILE GUIARD (Médecin-lieutenant des Troupes Coloniales). *Paris: Masson et Cie, 120 Boulevard Saint-Germain, 1930. pp. 126 and 13 plates. 30 francs.*

In a short preface to this book M. Paul Rivet refers to the 'beautiful collections of the Wellcome Historical Medical Museum in London'. Those interested in the subject of prehistoric and primitive 'holing' of the cranium during life and after death cannot do better than pay a visit to this museum, where they will find a series of experiments performed upon recent and dry human crania, with elementary implements (flint, obsidian, shell, shark's teeth, etc.) which demonstrate how the operation was performed by primitive people on the living skull, for very varied reasons, in widely separated countries; and also after death for the purpose of acquiring amulets.

The book is well and clearly printed in bold type; but, as in so many French books, is only bound by a thin cardboard cover. It is divided into an introduction, ten chapters, together with a summary of the author's conclusions in the last three pages. The thirteen plates at the end of the book contain five radiographed skulls. Radiography does not appear to me to be any help whatsoever in elucidating facts of diagnostic importance or of adding clarity to methods of technique as to how the operation in question was carried out.

The historical aspect of the subject shows that the re-discovery of this fascinating prehistoric custom really dates from the year 1865, when Prunières, a medical practitioner of Marvejols, discovered in a large dolmen near Aiguères, in the department of Lozère, a skull that had been operated upon during life, near to which were five fragments of cranial bone that had been sawn for some purpose. It was left to Broca to interpret this finding and his theory that these fragments were in reality 'amulets', and referred to a

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religious rite, has never been disputed. Dr Guiard mentions as pioneers in the early work connected with this discovery the names of de Baye, Lucas-Championnière, Fletcher, Muniz and MacGee. To these may be added Capitan and Cartailiac, and three Englishmen: Sir Victor Horsley, Rev. J. A. Crump and Samuel Ella—the latter two being missionaries in the South Sea Islands where they witnessed this operation being performed in the most primitive fashion with flakes of obsidian.

In chapter II 'Pseudo-Trepanations' are referred to and by these is meant those occurrences which might be confused with or mistaken for the real operation. Dr Guiard does not give an exhaustive list, omission being made of congenital deficiencies of bone, which always happens in the parietal region of the skull and are often double and symmetrically placed.

Accounts are given of operations on the living subject and the cutting of amulets from the dead skull that bore signs of its owner having been operated upon during life, also mention of the kind of roundels that were fashioned.

The presence of cranial amulets in the dolmens of France by the side of skulls that had been operated upon during life demonstrate, as pointed out by Broca, the existence of an ethical rite. In prehistoric Peru, besides specimens of skulls that had been broken by battle-axes and attempts made, by rude surgery, to deal with these holes, there are other skulls that bear no traces of fractures, but have been deftly 'trephined', with stone implements, and these last, when placed side by side with the French specimens taken from their dolmens, look very much alike in their surgical workmanship; but the motives that brought about each of these similar results were very widely different. The difference consists in the presence or absence of amulets from the graves. Not a single cranial amulet has ever been found in relation to the Inca burials, for the good reason that it was against the religious principles of the Inca to permit the dead body to be mutilated in any way.

Chapter VI has reference to those tribes that are still in a stone-age culture and who, even at this day perform these operations on their living fellow tribesmen with obsidian flakes or other primitive implements. Melanesia and Polynesia among the Australasian islands are places where these operations are performed.

The T-sincipital, a curious custom, consisted in scraping the bone of the crown of the skull in both a longitudinal and transverse manner, in the form of a cross. Plate III shows this well and the new bone formed at the centre of the cross proves it was done during life. The reason is not known why such an operation was performed. Some think it was an initiation rite.

So many specimens of the ritualistic operation are discovered in the dolmens of France, that it leads one to infer that they were not by any means all done primarily for epilepsy. The prestige which the epileptic had on his own account was greatly added to if he successfully recovered from a 'holing' operation, which made him the envy of many other members of the tribe. It is not, therefore, to be wondered that those who were not epileptic were anxious to have the operation, so that they might win a prestige for themselves. Both the epileptic and the insane individual were revered in those distant days for the reason that they were not understood and what was not understood was supernatural and hence divine. Brain disorders and fits were considered to be due to possession of a devil. Now trephination will occasionally cure this condition and if the epileptic was cured of his epilepsy he actually gained ground in the eyes of his tribe for having successfully recovered from the operation.

In dealing with the geographical distribution of this operation Dr Guiard points

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out that it nearly always is found in brachicephalic skulls and not in dolicocephalic ones, which would be a valuable contribution to the study of this custom were it found to be consistently true. He mentions, however, in his last chapter (conclusions) that in Melanesia, where the operation is still practised, out of 500 skulls exhumed only 100 were brachicephalic.

A bibliography of 17 pages completes the book except for the excellent plates referred to earlier in this article.

T. WILSON PARRY.

A HISTORY OF THE ROMAN REPUBLIC. By CYRIL E. ROBINSON, assistant master at Winchester College. *Methuen*, 1932. pp. XII, 471. 6s.

It is difficult for a historian of the Roman Republic to select from the mass of details before him those which are ultimately important. Mr Robinson has shown a nice discrimination in giving us just enough detailed background to justify his generalizations and make the sequence of events intelligible. After a slight sketch of the prehistoric age in Italy, he deals shortly with the kingly period, the events of which he considers to be mostly legendary, though a substratum of historical truth can be traced even in the traditional account of Servius Tullius.

In telling of the struggle of supremacy in Italy he necessarily excludes most of the picturesque stories of Livy's narrative, but strongly emphasizes the importance of the sequels, viz. the political awakening in the early 3rd century and the recognition, at the time of the embassy to Ptolemy Philadelphus, that Rome is a power which counts with the outside world. The results of the Carthaginian Wars and the spread of Hellenism are admirably described, and the short character-studies with which the book abounds serve to illustrate and explain the events of history. We have a clear picture of Hannibal's personality and ambitions; the elder Cato is treated in a way which may seem too sympathetic. The book practically ends with the death of Caesar, but an epilogue of a dozen pages carries us on to Actium. Mr Robinson regards Augustus as a man of exceptional talent and perseverance, but lacking in the originality which characterized Caesar.

J. F. DOBSON.

THE MUSEUM JOURNAL. Nos. 3-4, September-December, 1931. *Published by the Museum of the University of Pennsylvania, Philadelphia.*

These two numbers of the MUSEUM JOURNAL contain reports of two excavations with which the University of Pennsylvania is closely associated. The second report is Dr Woolley's excellent report of excavations at Ur in 1931. This is accessible elsewhere and is probably by this date familiar to readers of *ANTIQUITY*. The first report is that of Dr Schmidt who worked at Fara in 1931. This is probably less familiar and will take up the whole of this notice.

Dr Schmidt describes the methods and confessedly 'tentative' results of his work at Fara where Koldewey, Andrae and others worked before him. His small-scale operations at a few selected points on the Fara mound are first outlined in order of calendar from 23 February to the end of April. Then he arranges the finds in order of periods:—Fara III, the Period of the Third Dynasty of Ur; Fara II, the Period of the early Sumerians; Fara I, the Painted Pottery Age (Jemdet Nasr). This division suggests Dr Schmidt's 'belief' that the Fara folk of Fara III and II were distinct from the Fara folk of Fara I.

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Here, in summary, are the finds arranged by Dr Schmidt under the three periods.

FARA III. Two tablets (one dated Gimil Sin 1). Pottery: ('bowl has an offset rim which forms a definite "neck"; bell-shaped spout with thin perforation; a colander spout'). Figurines: ('delightful'; elaborately dressed women with paraphernalia of divinity or royalty'). 'Communal burial'; not sacrificial; perhaps in epidemic; hurriedly disposed bodies; bones interlocked; no mortuary vessels; no ornaments.

FARA II. Tablets: 85 archaic, possibly one school-tablet; only 3 baked; bi-convex, squared with round corners, even circular; one series found in a drain pipe. Burial: 37 graves; plain mat and coffin equally; vessels and beads; suggesting as Germans said, that part of mound was necropolis. Architecture: straw tempered, sun-dried, plano convex, bricks. A well-constructed granary. Mud wall fragments below the brick foundation. Glyptic: 'the most attractive of our finds'; part of a seal cylinder impression on dark grey clay label, is a 'beautiful, modelled Sumerian, clean-shaven face, having skull cap and long robe with lengthwise seam'. Also, a standing bull 'artistically still more perfect'. Pottery: crude; wheelmade. Metal: Fara never knew an Iron Age.

FARA I. Below 'an alluvial layer at a depth between 4 and 5m. below the mound's surface'. No traces of architecture; no animal or human remains. Pottery: rarely pleasing in form; monochrome, bichrome, trichrome decorations of simple geometric designs. Forms resemble al-Ubaid period. Burials: two graves; jar close to the skull; skeletons lay on right side. Seal cylinders of very archaic type.

Dr Schmidt makes a few conjectures: *e.g.* duration of Period II is approximately 'from about the middle of the 14th millennium to the beginning of the Sargonic period (about the 27th century)'; that the distinction between the people of Fara III and II and the people of Fara I, is 'utter' 'linguistically, culturally and perhaps racially'. This is clearly guess work and not history.

Some of the finds are well illustrated by plates. A neat map at the beginning of the report puts Fara clearly in its place: *then* only 60 miles removed from the Persian Gulf; *today*, 200 miles away.

T. FISH.

THE SCRIPT OF HARAPPA AND MOHENJO-DARO AND ITS CONNECTIONS WITH OTHER SCRIPTS. By G. R. HUNTER. *Kegan Paul, Trench, Trubner and Co. Ltd.*, 1934. pp. XII, 210, with 37 plates. 21s.

As its preface states, this work was submitted in manuscript to the University of Oxford in supplication for the degree of Doctor of Philosophy; and it would seem that the book is a photographic reproduction of the original manuscript. Issued in such a form it does not merit the price asked for it; moreover, the typing should have been done as carefully as possible, the headlines centrally placed, and corrections and additions should not have been made in a microscopic handwriting.

In his analyses of the Indus Valley script, Dr Hunter seems to have explored every avenue and every arrangement. He claims to have discovered the signs for 'god', 'servant or slave', 'son', a dative and an ablative, and if these interpretations be accepted by philologists some advance has been made. He suggests the possibility that Proto-Elamite, Sumerian and the Indus Valley scripts had a common ancestry, and that perhaps Egypt should be included with these countries. On other grounds I am prepared to agree that there is a possibility that the cultures of the first three countries

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at least were derived from a common source, and there is a certain amount of cranial evidence to support such a view. In eight tables Dr Hunter compares certain signs in the Indus script with Egyptian, Proto-Elamite, Sumerian, Brahmi, South Semitic, Phoenician and Cypriote characters, but some of the comparisons seem to me far-fetched. Similarities are to be expected with the scripts of early Elam and Sumer and they are in fact very striking, but the resemblances further afield are by no means convincing.

In an introduction of four pages Professor Langdon states that 'there can be no doubt concerning the identity of the Indus and Easter Island scripts'; the latter is, however, written on wooden documents obviously of no great age, and I must confess that I am quite incredulous. Even if the Indus Valley people had been a maritime race, which Dr Hunter proposes but for which there is as yet no definite evidence, the distance of this very remote island in the Pacific from the shores of India would even in modern days make such a voyage an impossible feat for a small sailing vessel. As evidence that the people of the Indus valley were seafarers, Dr Hunter points out (p. 13) that their sites were on the banks of navigable rivers—so were many ancient settlements; that the fish sign is greatly used in the script—but there are fish in rivers as well as the sea; that bitumen was brought from overseas—but the bitumen used at Mohenjo-daro (in one building only) was readily obtainable in Balūchistān; and, lastly, that the absence of seal impressions at Mohenjo-daro and Harappā argues that the seals were principally employed for stamping merchandise for export purposes. I am afraid none of these arguments carries very great weight. Two representations of boats have been found at Mohenjo-daro, one of which is mastless and might, therefore, have been exclusively used for river traffic; but on the sum of the evidence it is quite probable that a very considerable amount of trade was done with Sumer and adjacent countries by sea as well as by overland routes.

It is a great pity that no reference is made to the work of other scholars on this script; and though this book is only now published, no mention whatever is made to the matter contained in *Mohenjo-daro and the Indus Civilisation*,* edited by Sir John Marshall, which was issued in 1931. If he had referred to this work, Dr Hunter would have avoided a number of mistakes. For instance, in discussing the age of the Indus Valley civilisation he adduces from *black marble seals* (p. 15) evidence of an early date, whereas only one marble seal has been unearthed at Mohenjo-daro, and that is white and an importation. What he mistook for black marble is black steatite, and seals of this stone are no more primitive or foreign than those of white steatite, of which most of the seals were made. Similarly, the *black marble bracelets* referred to on p. 26 are in reality hard-baked clay; and that the fragment of a silver bar mentioned on p. 16 is not incised with late Sumerian characters is clear from MD, p. 519.

I cannot accept the author's identification of the inscribed copper tablets from Mohenjo-daro as coins (pp. 26–28). If they had been, one would expect them to occur in groups and, moreover, to be as plentiful at Harappā, where only one specimen has been found, as at Mohenjo-daro. That they were amulets appears certain. In most cases the inscription on one side of these objects appears to be definitely associated with the particular animal on the other side. No. 30 in Dr Hunter's list is a rhinoceros and not an elephant (MD, cxvii, 7), and the inscription is the same as that on no. 31, where also the animal is a rhinoceros. The beast on no. 43 is not a reindeer but a hare, and the

* Afterwards referred to as MD.

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inscription agrees with that on no. 44 (MD, cxvii, 5). On the reverse of those tablets on which there is an antelope looking backwards (it is not a bull), there is the same group of signs (MD, cxvii, 1; cxviii, 1); and another similar specimen is shortly to be published. The exceptions to this regular association of animal and inscription on these copper tablets are so rare that there is every reason to believe that the inscriptions definitely refer to the animals or the deities that they represent, though that is certainly not the case with the seals.

On reference to MD, cxviii, 9, it will be seen that the clay prism mentioned by Dr Hunter on p. 25 shows a figure of the unicorn-like animal being carried in procession, with its cult-object (?) behind it and preceded by two men clearly carrying standards and not tables-of-offerings, as he suggests. The circular seal mentioned on p. 31 has only *six* animal heads (MD, cxii, 383); it therefore cannot be the beast familiar to the writer of the *Apocalypse*. I purposely quote these inaccuracies to show that the author of this book could have revised his hand-copies by reference to the already published material.

Those who have worked upon the Indus Valley script are all agreed that it is to be read from right to left, and that it is not alphabetic but a mixture of the phonetic and ideographic. Dr Hunter identifies 234 distinct signs as apart from compounds.

The numeral signs present a problem, and Dr Hunter thinks with Mr Smith and Mr Gadd that in particular cases these signs do not denote numbers, but have a phonetic value. On p. 98 it is stated that it is not certain how the number 10 was written. A clue to this number has lately been found in a group of inverted U-shaped marks incised on a copper blade-axe in association with a series of vertical strokes that appear to be digits, making up the number 76 in all. An inverted U-shaped sign denoted 10 in ancient Egypt.

In conclusion, I should like to add something to several of Dr Hunter's identifications. The horned man amongst the signs, which he identifies as the sign for a deity, is comparable with the horned figurines of pottery that are so frequently found at Mohenjo-daro. The point that appears between the horns on the pictographs is probably the little sprig of flowers or leaves that is seen so frequently on the heads of the deities on the seals (MD, vol. I, pl. xii, 18). The four-legged animal (pp. 124, 190) is most probably a turtle and not a beetle; several model turtles have been found, as well as their actual plastra. Also, the sign identified as an umbrella (parasol would have been a better word) on pp. 105, 169, is surely a leaf of some kind; it appears quite often among the devices on the painted pottery (MD, xc, 18).

Despite these inaccuracies and shortcomings, this book is a painstaking endeavour to solve various problems in connexion with a very interesting and important script, and it should be in the hands of all students of the languages of the Ancient East.

ERNEST MACKAY.

CORRIGENDUM

Mr Stanley Casson points out an error in printing his review of Nilsson's *Homer and Mycenae* in our March number. On p. 112 *lines* 35, 36 should read as follows:— . . . Persson had the name ΠτοριδάΦωvos. Prof. Nilsson without explanation gives here the transcription Ποσειδάωνος.

Books Received

- THE CENOTAPH OF SETI I AT ABYDOS, by H. Frankfort ; with chapters by A. de Buck and Battiscombe Gunn. Egypt Exploration Society, Memoir no. 39 [Milford, London], 1933. Vol. I, *text* ; vol. II, *plates*.
- THE ARCHAEOLOGY OF SURREY, by D. C. Whimster. *Methuen's County Archaeologies*, 1931. *pp.* 254.
- MEXICO BEFORE CORTES, by J. Eric Thompson. *New York and London : Charles Scribner's Sons*, 1933. *pp.* 298. 10s 6d.
- THE ROMAN FORT AT CADDER, NEAR GLASGOW, by John Clarke. *Glasgow : Jackson, Wylie & Co., 73 West George St.*, 1933. *pp.* 93. 12s 6d.
- THE RISE OF THE CELTS, by Henri Hubert. *Kegan Paul* [Hist. of Civ. series], 1934. *pp.* 335. 16s.
- WILLIAM THORNE'S CHRONICLE OF ST. AUGUSTINE'S ABBEY, CANTERBURY, now rendered into English, by A. H. Davis, with an introduction by Prof. A. Hamilton Thompson. *Oxford : Basil Blackwell*, 1934. *pp.* 740. 32s.
- OLDAWAY ; DIE SCHLUCHT DES URMENSCHEN, von Hans Reck. *Leipzig : Brockhaus*, 1933. *pp.* 308. 8M.70 and 10M.50.
- LES SEPULTURES CHEZ LES PRÉGERMAINS ET LES GERMAINS DES AGES DE LA PIERRE ET DU BRONZE, par Emile Metzger. *Paris : Emile Nourry, 62 rue des Ecoles*, 1933. *pp.* 130. *Paper covers : price not stated*.
- DER GESETZMÄßIGE LEBENSLAUF DER VÖLKER ALTÄGYPTENS, by Hartmut Piper. *Leipzig : Theodor Weicher*, 1933. 4.20 RM.
- EXCAVATIONS AT ANCIENT THEBES, 1930-31, by Uvo Hölscher. [Camb. Univ. Press, England]. *Univ. of Chicago Press*. Oriental Institute Communications, no. 15. *pp.* 65. 5s 6d.
- TELL ASMAR AND KHAFAGE—The first season's work in Eshnunna 1930-31 ; by Henri Frankfort, Thorkild Jacobsen and Conrad Preusser. [Camb. Univ. Press, England]. *Univ. of Chicago Press*. Oriental Institute Communications, no. 13. *pp.* 112. 9s.
- DIE HETHITISCHE BILDERSCHRIFT, by Emil O. Forrer. *Univ. of Chicago Press*. [Camb. Univ. Press, England], 1932. *pp.* 62, in German. 6s.
- VORGESCHICHTLICHE FORSCHUNGEN HEFT 8. DIE STEIN- UND KUPFERZEIT SIEBENBÜRGENS, von Hermann Schrollner. *Berlin : de Gruyter*, 1933. 18M.
- OPGRAVINGEN OP HET DOMPLEIN TE UTRECHT. *Haarlem : H. D. Tjeenk Willink & Zoon N.V.*, 1934.
- NIEUWE PRENTSCHE VOLKSALMANAK, 1934 (52 jaar). *Uitgave van van Gorcum & Comp., aan den Brink, Assen* [Holland].

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- CAMBRIDGE EXCAVATIONS IN MINORCA: TRAPUCÓ, part 1; by Margaret Murray. *London: Quaritch*, 1932. pp. 50, and 52 plates. 12s 6d.
- THE EXCAVATION OF TELL BEIT MIRSIM, vol. 1, The pottery of the first three campaigns, by W. F. Albright. *Annual of the American Schools of Oriental Research*, vol. XII (for 1930-31), 1932. pp. 94, and 71 plates.
- TWELVE CENTURIES OF ROME (753 B.C.—476 A.D.) by G. P. Baker. *G. Bell & Sons*, 1934. 16s.
- THE FEAR OF THE DEAD IN PRIMITIVE RELIGION: lectures delivered on the William Wyse Foundation at Trinity College, Cambridge, 1932-3, by Sir James George Frazer. *Macmillan*, 1933. pp. 204. 10s 6d.
- THE FLOWING VASE AND THE GOD WITH STREAMS, by E. Douglas van Buren. *Berlin: Hans Schoetz & Co.*, 1933. pp. 149 and 23 plates. Price not stated.
- THE ANCIENT SYNAGOGUE OF BETH ALPHA: an account of the excavations conducted on behalf of the Hebrew University, Jerusalem, by Eleazar L. Sukenik. *Univ. Press, Jerusalem [Milford, London]*, 1932. 35s.
- THE WOODLANDS AND MARSHLANDS OF ENGLAND, by H. A. Wilcox (Mrs G. S. Treleaven), with a foreword by Professor P. M. Roxby. *Univ. Press of Liverpool [Hodder and Stoughton, London]*, 1933. 2 maps with 55 pages of explanatory text. 6s.
- FOSSIL MAN IN CHINA: The Choukoutien cave deposits, with a synopsis of our present knowledge of the late Cenozoic in China, by Davidson Black, Teilhard de Chardin, C. C. Young and W. C. Pei; edited by Davidson Black. *Memoirs of the Geological Survey of China (Series A, no. 11) Peiping, May 1933*. 82 text figures, 3 tables, 6 maps. In English and Chinese, mainly English.
- CATALOGUE OF WALL-PAINTINGS FROM ANCIENT SHRINES IN CENTRAL ASIA AND SISTAN, recovered by Sir Aurel Stein; described by Fred. H. Andrews. *Delhi: Manager of publications*, 1933. Rs. 5-6 or 8s 9d.
- ENGLISH CHURCH CRAFTS SERIES. *Published by Messrs Batsford*. (1) ENGLISH CHURCH WOODWORK, by F. E. Howard and F. H. Crossley (1917), 25s; (2) ENGLISH CHURCH FITTINGS, by Aymer Vallance (1923), 21s; (3) OLD CROSSES AND Lych GATES, by Aymer Vallance (1920), 12s 6d.

These volumes have now been re-issued at prices considerably less than when originally published (as shown by the dates above). Messrs Batsford have also issued a reprint of ENGLISH CHURCH MONUMENTS, by F. H. Crossley (1921), 21s.